THE LANCET.

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

TELEGRAPHIC ADDRESS—LANCET, LONDON

[ONE HUNDRED AND SIXTY PAGES.]

TELEPHONE NUMBER—5356 GERRARD

No. XII. OF VOL. I., 1906. No. 4308. Vol. CLXX.

LONDON, SATURDAY, MARCH 24, 1906.

PRICE 7d.; POST FREE, 7½d. [Pp. 120+40.

Just Published. Pp. x. + 212, with 39 original Illustrations. Price 7s. 6d. net.

GYNÆCOLOGICAL DIAGNOSIS. By ARTHUR E. GILES, M.D., B.Sc. Lond., M.R.C.P. Lond., F.R.C.S. Edin., Gynæcologist to the Tottenham Hospital; Surgeon to Out-patients, Chelsea Hospital for Women, &c.
London: Baillière, Tindall, & Cox, 8, Henrietta-street, Covent Garden.

Just Published. Pp. xvi. + 146. Price 7s. 6d. net.

THE PROCEDURE and PRACTICE of the KING'S CORONER in his JUDICIAL and MINISTERIAL CAPACITIES. By R. HENSLOWE WELLINGTON, M.R.C.S., L.R.C.P. Lond., Deputy Coroner, City of Westminster and South-West Division of London, &c.
London: Baillière, Tindall, & Cox, 8, Henrietta-street, Covent Garden.

Shortly ready.

"ON CARBOHYDRATE METABOLISM" and "THE FUNDAMENTAL PRINCIPLES, and the TREATMENT, of DIABETES DIALECTICALLY DISCUSSED."
By F. W. PAVY, M.D., LL.D., F.R.S.
J. & A. Churchill, 7, Great Marlborough-street.

PRACTICAL PRIVATE and PERSONAL INSTRUCTION in SUBJECTIVE SIGHT TESTING free to Medical Men by Mr. F. DAVIDSON, at his rooms, 140, Great Portland-street, London, W. Communication invited. Study and Practice of Retinoscopy, with a Model Eye, by Mr. Percy Dunn. Price, including Model Eye, 17 Discs showing typical conditions of the Retina, and various lenses for Retinoscopic Practice, £1 5s. "Sight Testing for the General Practitioner," by F. Davidson, price 2s. 6d.
Direct Illumination of the Eye made easy by means of simple Electrical Appliance, complete with cord and battery, 30s.
F. Davidson & Co., 140, Great Portland-street, London, W.

COMMON COMPLAINTS of WOMEN. By BEDFORD FENWICK, M.D., Physician to The Hospital for Women, Soho Square.
"Eminently practical."—MEDICAL TIMES.
3s. 6d. post free.

OPERATIONS of OPHTHALMIC SURGERY. By HAROLD B. GRIMSDALE, M.B., B.C., F.R.C.S., Assistant Ophthalmic Surgeon to St. George's Hospital.
"Calls for nothing but praise."—OPHTHALMOSCOPE.
5s. post free.

COMMON DISEASES of the RECTUM and ANUS. By CECIL H. LEAF, M.A., M.B. (Cantab.), F.R.C.S. (Eng.), Surgeon to the Cancer Hospital and to the Gordon Hospital.
"Contains much more than is apparent at first sight."—THE LANCET.
3s. 6d. post free.
E. H. Blakelev, 11, Adam Street, Strand, London, W.C.

Illustrated by 95 figures and 58 cases. Pp. 301. 10s. net.

SURGERY of PARALYSES. By A. H. TUBBY, M.S. Lond., F.R.C.S. Eng., and ROBERT JONES, F.R.C.S.E.
"Can confidently recommend it as a practical summary of the most modern views."—EDINBURGH MEDICAL JOURNAL.
"No one interested in the treatment of paralysis can afford to leave it unread."—BIRMINGHAM MEDICAL REVIEW.
"Indicates original and successful methods of treatment."—AMERICAN JOURNAL OF ORTHOPÆDIC SURGERY.
London: Macmillan & Co., Ltd. New York: The Macmillan Co.

New and Revised Edition.

FOOD and the PRINCIPLES of DIETETICS. By ROBERT HUTCHISON, M.D. Edin., F.R.C.P., Assistant Physician to the London Hospital. xx. + 582 pages. Illustrated. Demy 8vo. 16s. net. *** The chapters on Food in Disease have been greatly extended in this edition and the latest patent foods are described.
London: Edward Arnold, 41 and 43, Maddox street, W.

Now ready. Third Impression, 8vo, cloth, pp. xvi.-614, price 16s.

THE PRINCIPLES of TREATMENT and their APPLICATIONS in PRACTICAL MEDICINE. By J. MITCHELL BRUCE, M.D., F.R.C.P., Physician to, and Lecturer on the Practice of Medicine, Charing Cross Hospital; Physician, Hospital for Consumption, Brompton, London.
Young J. Pentland.
Edinburgh: 11, Teviot-place. London: 38, West Smithfield, E.C.

Second Edition, with 474 Illustrations. Price 10s 6d. net.

MANUAL of OPERATIVE SURGERY. By H. J. WARING, M.S., B.Sc. Lond., F.R.C.S., Assistant Surgeon to, and Lecturer on Surgical Anatomy at, St Bartholomew's Hospital; Surgeon to the Metropolitan Hospital.
Young J. Pentland.
Edinburgh: Teviot-place. London: 38, West Smithfield, E.C.

BY ARTHUR H. N. LEWERS, M.D. Lond., F.R.C.P. Lond., Senior Obstetric Physician, London Hospital; Lecturer on Midwifery, London Hospital Medical School; Examiner in Midwifery and Diseases of Women, Conjoint Board Royal College of Physicians, London, and Royal College of Surgeons, England, &c.
DISEASES of WOMEN. A Practical Text-book.
SIXTH EDITION. 12th thousand, thoroughly Revised, with 4 Plates and 168 Illustrations, crown 8vo, 10s. 6d.
"It is well written and well arranged, and the illustrations are particularly instructive and well selected."—BRITISH GYNÆCOLOGICAL JOUR.
CANCER of the UTERUS; a Clinical Monograph on its Diagnosis and Treatment. With the After-results in 75 Cases treated by Radical Operation. With 3 Coloured Plates and 51 original Illustrations, 8vo, 10s. 6d. net.
"The illustrations throughout the work, and especially those representing cancer of the body, are excellent, and will be found most helpful by the student of gynæcology."—JOUR. OF OBSTETRICS & GYNÆCOLOGY.
London: H. K. Lewis, 136, Gower-street, W.C.

Now ready. Eleventh Edition.

THE EXTRA PHARMACOPŒIA. By MARTINDALE & WESTCOTT.
A Real Pocket Book. See page 8.

SAUNDERS'
NEW EDITIONS
OF
IMPORTANT BOOKS.
See Advertising Page 7.

BY C. MANSELL MOULLIN, M.D. Oxon., F.R.C.S., Senior Surgeon and Lecturer on Surgery at the London Hospital; Examiner in Surgery at the University of Cambridge; late Examiner in Surgery at the University of Oxford.
ENLARGEMENT of the PROSTATE. Third Edition. Price 6s.
INFLAMMATION of the BLADDER and URINARY FEVER. Price 5s.
London: H. K. Lewis, 136, Gower street.
WHEN to OPERATE in INFLAMMATION of the APPENDIX. Second Edition. Price 2s. 6d.
THE SURGICAL TREATMENT of GASTRIC ULCER. Price 2s. 6d.
London: J. Bale & Danielsson, Ltd., 83-89, Gt. Titchfield-street.

MOUTH BREATHING and its RELATION to DISEASES of the THROAT, NOSE, and ACCESSORY CAVITIES. Price 2s. 6d. net. By MAYO COLLIER, M.S., F.R.C.S.
CHRONIC PROGRESSIVE DEAFNESS, its CAUSATION and TREATMENT. By same Author. Price 2s. net.
London: Baillière, Tindall, & Cox, 8, Henrietta-street, Covent Garden.

Just Published.
New (6th) Edition. Entirely re-written. 21s. net.

OSLER'S PRACTICE of MEDICINE
"One of the best representatives in English of the modern side of medical education."—BRITISH MED. JL.
London: Sidney Appleton, 25, Bedford-street, W.C.

Just published, 1s. net; by post, 1s. 1d.

ELECTROLYSIS in the TREATMENT of FACIAL and OTHER BLEMISHES. By J. D. P. MCLATCHIE, M.B., C.M.—London: H. J. Glaisher, 57, Wigmore-street, W.

Price 10s. 6d. net.

CONJUNCTIVITIS. By N. BISHOP HARMAN, M.B. Cantab., F.R.C.S. Eng., Ophthalmic Surgeon, Belgrave Hospital.
London: Baillière, Tindall, & Cox, 8, Henrietta-street, Covent Garden.

Now ready. SECOND Edition, with Illustrations, royal 8vo, 10s. 6d.

THE TREATMENT of LATERAL CURVATURE of the SPINE. With Appendix giving an Analysis of 1000 Consecutive Cases treated by "Posture and Exercise" exclusively (without mechanical support). By BERNARD ROTH, F.R.C.P.
London: H. K. Lewis, 136, Gower-street, W.C.

Just published. Third Edition. Entirely re-written. Demy 8vo. Price 5s. net, by post 5s. 4d.

INDIGESTION: The DIAGNOSIS and TREATMENT of the FUNCTIONAL DERANGEMENTS of the STOMACH. With an Appendix on the preparation of food by cooking, with especial reference to its use in the treatment of affections of the stomach. By GEORGE HERSCHELL, M.D. Lond.
H. J. Glaisher, 57, Wigmore-street, W.

THE LANCET is registered as a Newspaper. All rights reserved.

SILVER MEDAL, Paris Universal Exhibition, 1900.
GOLD MEDAL, Saint Louis, U.S.A., International Exhibition, 1904.

NEUROSINE PRUNIER

—Chemically Pure Glycerophosphate of Calcium—

A General Reconstituent of the Nervous System

(Neurasthenia, Phosphaturia, Rachititis, General Debility, Overwork).

NEUROSINE PRUNIER is prepared in three pharmaceutical forms—

1. NEUROSINE PRUNIER Granulated. 2. NEUROSINE PRUNIER Syrup.
3. NEUROSINE PRUNIER Cachets.

Each tablespoonful of Granulated or Syrup, and each Cachet, contains 4½ grains of pure Glycerophosphate of Calcium.

CHASSAING & CIE., 6, Avenue Victoria, Paris.

Samples of NEUROSINE PRUNIER will be sent gratis and post free to members of the Medical Profession on application to the General Depot for the United Kingdom,

F. H. MERTENS, 64, Holborn Viaduct, London.

BEWARE OF ROSIN.

Found in Transparent and all Yellow Soaps—NOT in VINOLIA WHITE BAR.

ROSIN—

„ Stiffens and hardens the hair, and makes it sticky.
„ Turns the skin yellow in time.
„ Renders lace yellow, stiff and sticky.
„ Causes linen to turn yellow and brown.
„ Forms calcium resinate in woollens.
„ Spoils woollens and flannels.
„ Imparts strong smell to clothes.
„ Is very irritating to the skin.
„ Makes the skin liable to chap.
„ Causes soap to melt away in water, and waste.
„ Costs one-third the price of soap.
„ Disguises the odour of bad fats.
„ Hides the rancidity in soaps made from bad fats.
„ Conceals the rancid yellow spots due to bad fats.

VINOLIA WHITE BAR is about the same price as the adulterated yellow soaps, but is all soap—no rosin.

VINOLIA CO., LTD. 3D.

The Erasmus Wilson Lectures

ON

THE DISTRIBUTION AND RECOVERY OF PERIPHERAL NERVES STUDIED FROM INSTANCES OF DIVISION IN MAN.

Delivered before the Royal College of Surgeons of England on March 12th, 14th, and 16th, 1906,

BY JAMES SHERREN, F.R.C.S. ENG.,

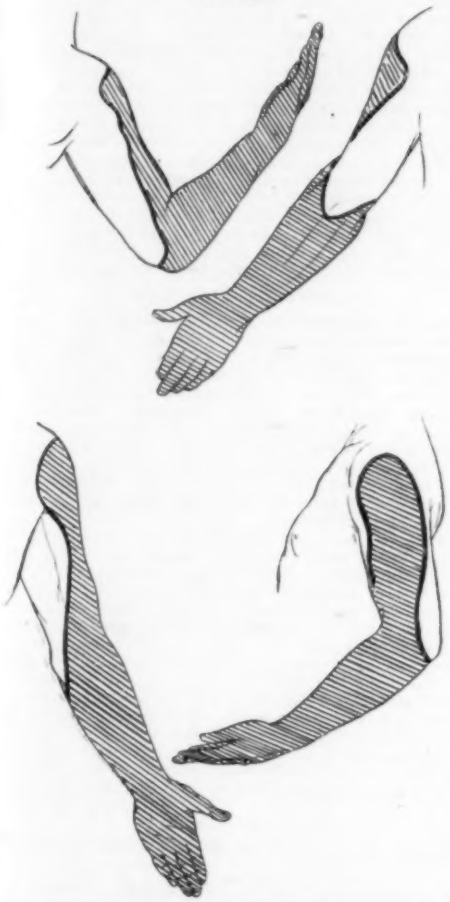
ASSISTANT SURGEON TO THE LONDON HOSPITAL; SURGEON TO THE POPLAR HOSPITAL FOR ACCIDENTS.

LECTURE II.[1]

Delivered on March 14th.

MR. PRESIDENT AND GENTLEMEN,—Lesions of the brachial plexus or of the roots composing it are common, but until recent years opportunities for verifying them by operation have been rare. The sensory result of complete division of the trunks of the plexus is depicted in Fig. 13 from a boy[2]

FIG. 13.



who received a severe injury to his shoulder, rupturing the brachial plexus. All forms of cutaneous sensibility were lost over this area and deep touch was not appreciated below the elbow. This point is important, showing the widespread anastomoses of the fibres which subserve deep sensibility. The pectorals, the latissimus dorsi, and all the muscles of the arm, the forearm, and the hand were paralysed and developed the reaction of degeneration. The serratus magnus, the rhomboids, and the trapezius were acting well and reacted normally to the interrupted current. Exploration above the clavicle revealed rupture of the upper and middle trunks of the plexus; it was impossible to dissect the lower trunk free from the fibrous tissue with which it was incorporated.

Cases of complete section verified by operation are few. In Thorburn's[3] well-known case of secondary suture of the whole plexus and the case reported by Maury and Duhring[4] in which the plexus was resected for neuralgia, the resulting paralysis of sensation and motion resembled that of the case which I have just described.

Until the past three or four years operative interference in division or injury of the roots of the plexus has been uncommon. But we are gradually accumulating evidence which will be of much value in determining the distribution of the various constituents of the plexus. The following case of accidental section of the anterior primary division of the fifth cervical nerve is of importance in this connexion.

The patient, a boy, aged 13 years, fell from a wall on to some railings, one of the spikes of which penetrated his neck. Ten weeks later he was admitted to the London Hospital, under the care of Mr. J. Hutchinson. The patient had noticed the paralysis immediately after the injury but was not aware of any anæsthesia. The spinati muscles, the rhomboids, the deltoid, the biceps, the brachialis anticus, and the supinator longus were paralysed and did not react to the interrupted current. To the constant current they responded with the typical slow contraction, with polar reversal. It will be seen from Fig. 14 that the limits of the loss of light touch

FIG. 14.

Loss of sensibility resulting from section of the anterior primary division of the fifth cervical nerve and descending cutaneous branches of the cervical plexus.

and of prick* corresponded almost exactly. The anterior and posterior borders were well defined, the lower being ill defined. Deep sensibility was present everywhere. Mr. Hutchinson explored the plexus a week after his admission. The anterior primary division of the fifth cervical nerve was completely divided, no other branch of the plexus being injured. In addition the descending branches of the cervical plexus were severed.

A similar case has been reported by Markoe.[5]

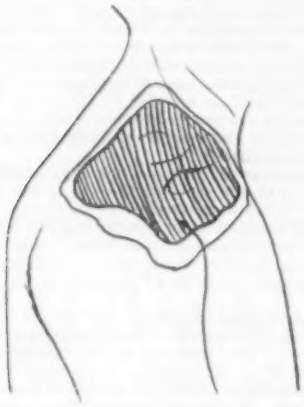
It is interesting to compare this area with that obtained, on the one hand, from section of the descending branches of the cervical plexus alone and with the result of section of the circumflex (Figs. 15 and 16).

Duchenne in his description of the paralysis which bears his name noticed that it was not usually associated with any marked sensory loss. All subsequent investigators have confirmed this. Rose[6] appears to have been the first to

[1] Lecture I. was published in THE LANCET of March 17th, 1906, p. 727.
[2] Head and Sherren: Brain, 1905, Summer Number, Case 50.
[3] Brit. Med. Jour., 1900, vol. i., p. 1073.
* In all the figures loss of sensibility to prick is represented by the shaded area and loss of sensibility to light touch by the unshaded.
[4] American Journal of the Medical Sciences, vol. lxviii., 1874, p. 29.
[5] Annals of Surgery, September, 1885.
[6] Deutsche Zeitschrift für Chirurgie, Band xxiv., 1886, p. 392.

report the result of operative section of the anterior primary divisions of the fifth and sixth cervical nerves. He resected portions of them together with their junction owing to their involvement in a tumour. After the operation he stated that he could find no sensory loss. Since then, owing to the

FIG. 15.



To show the loss of sensation resulting from section of the descending cutaneous branches of the cervical plexus.

work of Kennedy,[7] many cases of birth paralysis have been submitted to operation with resection of portions of these anterior primary divisions. Most of the operations have been in infants, consequently any sensory examination was of necessity unsatisfactory. But Kennedy,[8] in the case of a

FIG. 16.

To show the loss of sensation produced by rupture of the circumflex nerve.

boy, aged 15 years, could find no sensory loss and Taylor[9] in similar operations in children, aged eight years and ten years, could observe no change in sensation. Harris and Warren Low[10] record a case in which the anterior primary division of the fifth cervical nerve was divided without producing sensory loss and in an intelligent child, eight years of age, I could observe no change in the sensibility of the arm or forearm. It is evident that section of the anterior primary division of the fifth cervical nerve and sometimes of the fifth and sixth nerves may produce no sensory loss. Difference of opinion still exists with regard to the muscles which are supplied by these divisions. Wilfred Harris,[11] as the result of dissection and of his clinical work with Warren Low, came to the conclusion that Duchenne-Erb paralysis was caused by a lesion of the fifth cervical nerve.

[7] Brit. Med. Jour., 1903, vol. i., p. 299.
[8] Ibid.
[9] American Journal of the Medical Sciences, October, 1905.
[10] Brit. Med. Jour., 1903, vol. ii., p. 1135.
[11] Journal of Anatomy and Physiology, 1904, July.

With this I am in agreement. In one patient upon whom I operated for birth paralysis the injury had involved the fifth cervical nerve alone, causing its complete rupture. The accidental division which I have reported and Markoe's case also confirm this. But in all the cases operated upon by Kennedy,[12] and in six out of the seven cases recorded by Taylor, Clark, and Preut,[13] the situation of the lesion was at the junction of the fifth and sixth cervical nerves, and their division did not increase the extent of the paralysis. In one instance in which I performed nerve anastomosis of the fifth to the sixth anterior primary division I was able to stimulate these divisions with the interrupted current. The result of the stimulation of the fifth was negative, while the sixth produced vigorous contraction of the pectoralis major, chiefly its clavicular portion, with feeble response from the triceps. It seems probable, therefore, that the sixth cervical nerve supplies no muscle or group of muscles exclusively in a manner similar to the supply of the spinati, deltoid, the biceps, the brachialis anticus, and the supinators from the fifth. The main supply of the triceps appears to come from the seventh. This agrees with the anatomical research of Herringham.[14]

It was pointed out by Harris and Warren Low[15] that the radial extensors of the wrist and the pronator radii teres might be affected. In the patient with birth paralysis upon whom I operated and found rupture of the fifth anterior primary division, the radial extensors of the wrist were paralysed but in Mr. Hutchinson's case of accidental section they were not affected. So far I have not observed paralysis of the pronator radii teres in this injury. After this lesion, apart from recovery of the paralysed muscles, improvement may be noticed in the power of performing certain movements. Thus the boy who suffered division of his fifth cervical nerve considered that he was better because he could flex his forearm. This he did by means of the muscles arising from the external condyle of the humerus, with the forearm fully pronated these became feeble flexors. If the spinati are spared the patient may be able in time to abduct the arm. This was first pointed out by Duchenne in cases of deltoid paralysis, among later writers on the subject are Ross,[16] Kennedy,[17] and Kron.[18] The muscles taking part in the action are the supraspinatus, the clavicular portion of the pectoralis major, the trapezius, and the serratus magnus.

DIVISION OF POSTERIOR ROOTS.

Division of posterior roots produces an area of dissociated sensation, the area insensitive to prick being greater than that insensitive to light touch.[19] After this operation large areas may be left, over which the patient can appreciate light touches with cotton wool and the minor degrees of temperature but entirely fails to recognise a prick or ice and water at 50° C. There are few recorded cases of this character but a study of the one reported by Prince[20] of division of the fifth, sixth, and seventh cervical posterior roots is confirmatory, the final result of the operation being to leave an area of analgesia larger than that of the "tactile anæsthesia for light touch."

Summary.—In the upper limb, division of a nerve produces an area of loss of sensibility to light touch greater than that of loss of sensibility to prick and far more extensive than that of loss of sensibility to deep touch, which may be appreciated and well localised over the whole affected area. Division of the whole plexus produces an area of loss of sensibility to prick equal in extent to that of loss of sensibility to light touch, with a smaller loss of sensibilty to deep touch. Section of an anterior primary division may lead to no loss of sensibility unless, as in the case of the first dorsal, it enters largely into the composition of one nerve (the ulnar). After section or injury of this division a change in sensibility appears to be much more common. Division of several posterior roots produces an area of loss of sensibility to prick much greater than that of loss of sensibility to light touch.

THE SCIATIC NERVE.

Division of the sciatic nerve causes a widespread loss of

[12] Brit. Med. Jour., vol. i., 1903, p. 299.
[13] American Journal of the Medical Sciences, October, 1905.
[14] Proceedings of the Royal Society, vol. xli., 1886, p. 423.
[15] Brit. Med. Jour., vol. ii., 1903, p. 1135.
[16] Brain, vol. viii., 1884-85, p. 71.
[17] Brit. Med. Jour., vol. i., 1898, p.
[18] Deutsche Zeitschrift für Nervenheilkunde, Band xv., S. 133.
[19] Head and Sherren, p. 194.
[20] Brain, 1901, p. 116.

sensibility below the knee, a strip on the inner side of the leg alone remaining sensitive. (Fig. 17.) This area of loss of sensibility is bounded by definite borders, the boundaries of loss of sensibility to prick and that of loss of sensibility to light touch being practically identical. Division of this nerve, verified by operation, is rare; although we were able to examine 12 cases of injury to the sciatic nerve in one only

FIG. 17.

To show the loss of sensation produced by division of the sciatic nerve.

was the nerve seen to be divided at operation. Létiévant[21] quotes cases of resection of portions of this nerve for neuralgia and with tumours but in none of them is the loss of sensibility clearly stated. The figure which he gives of the resultant loss appears to have been drawn from an instance of bullet wound and is not so widespread as that which I have depicted, which corresponds to that found in an instance carefully worked out by Sherrington[22] after resection of a portion of the nerve in the upper third of the thigh. Several cases are also recorded in Chipault's work[23] but in none of them is the anæsthetic area described.

I am unable to map out the full distribution of this nerve, to do so a case of division of the internal saphenous must be studied; such a case has not come under my notice. It must, however, differ very little from that of its exclusive supply, seeing that the limits of loss of sensibility to prick and to light touch are almost identical.

THE INTERNAL SAPHENOUS NERVE.

The area of full supply of the internal saphenous nerve in the lower two thirds of the leg is mapped out after division of the sciatic nerve (Fig. 17). The area was first delimited in this way by Sherrington.[24]

THE EXTERNAL POPLITEAL NERVE.

Examples of injury to this nerve are by no means uncommon, but here again opportunities for operative verification are few. The nerve may suffer injury when bound up with the internal popliteal to form the sciatic, or, after it has separated, above or below the point at which its lateral cutaneous branch is given off.

FIG. 18.

The loss of sensibility produced by division of the external popliteal nerve above its lateral cutaneous branch.

[21] Traité des Sections Nerveuses, pp. 139, 140, Fig. 7.

[22] Philosophical Transactions of the Royal Society, B. 190, p. 102 and Plate 6.

[23] L'État Actuel de la Chirurgie Nerveuse.

[24] Philosophical Transactions of the Royal Society, B cxc., p. 202. Fig. 7.

Division above the lateral cutaneous branch produces an area of loss of sensibility on the outer side of the leg and dorsum of the foot (Fig. 18), with well-defined boundaries except at its external border in the lower third of the leg and the outer surface of the foot, which territory it supplies in common with the external saphenous nerve. The boundaries of the loss of light touch and of prick are almost coterminous; deep sensibility is usually perceived over the whole of the affected portion of the leg.

We will now compare this loss with that seen after division of the nerve below its lateral cutaneous branch. This is the usual seat of the injury. (Fig. 19.)

FIG. 19.

To show the loss of sensation produced by division of the external popliteal nerve below its lateral cutaneous branch.

The loss of sensibility resulting from this lesion is only absolute on the dorsum of the foot and lower third of the leg. The anterior border of the area insensitive to light touch is as well defined as after division of the whole nerve, but its posterior and that on the outer border of the foot merge gradually into parts of normal sensibility. Sensibility to prick is abolished over a triangular area on the dorsum of the foot, but is defective over an area almost as large as that anæsthetic to cotton wool. After division of the nerve in this situation similar phenomena may be observed to those seen after division of the ulnar nerve below its dorsal branch.

Division of the external popliteal nerve leaves the dorsum of the toes sensitive; their nerve-supply in this way resembles that of the fingers, but the great toe, unlike the thumb, receives its supply from plantar branches.

It is essential to remember the differences in the loss of sensibility which result from division above and below the lateral branch. I have been able to find one reference only to this important point. Delbet,[25] in a discussion on the effects that follow division of the nerve, pointed out the slight loss which arises when the nerve is divided in the latter situation and concluded that lack of knowledge of this had lead to wrong conclusions.

THE POSTERIOR TIBIAL NERVE.

I have been unable to obtain an example of division of the internal popliteal nerve, but Fig. 20 was taken from a

FIG. 20.

To illustrate the loss of sensation produced by section of the posterior tibial nerve at the ankle.

[25] Bulletins et Mémoires de la Société de Chirurgie, vol. xxvii., 1 p. 445.

patient in whom the posterior tibial nerve was divided behind the internal malleolus.

Division of the nerves of the lower limb causes a loss of sensibility similar to that produced by, section of a nerve of the upper extremity, the largest area of loss being to light touch, then to prick, and least of all to deep sensibility.

Summary.—I have attempted to show that division of a peripheral nerve produces a well-defined loss of sensibility to light touch, a less extensive and widely varying loss of sensibility to prick, with often no loss of deep touch. I also pointed out that division of a branch of a nerve—for example, the radial branch of the musculo-spiral—may produce no demonstrable effect on sensibility. I am of the opinion that the cause of the mistakes in description that have undoubtedly arisen, is to be found in the presence of deep sensibility in many instances and the relatively small area of loss of sensibility to prick in others and to want of appreciation of the loss of sensibility to light touch. In order to avoid these sources of error all testing must be carried out with care. The estimation of the loss of sensibility resulting from division of a peripheral nerve cannot be carried out hurriedly with any hope of success in diagnosis.

Loss of light touch is first investigated by gently touching the part with a wisp of cotton-wool; if the wool be tightly rolled up and applied roughly, deep sensibility may be evoked. The testing should progress from affected to normal parts; in this way the area will be accurately marked out. A sharp pin should be used as a test for sensibility to prick, and care must be taken that the patient understands that he is only to speak when he feels the sharpness of the stimulus, not the touch. Lastly, deep touch should be investigated by means of some blunt object, such as the end of a pencil.

The use of temperature tests in clinical work gives us little more information than that given by the more simple tests.[26] Its use is surrounded by difficulties, but carefully applied it serves as a check and should be employed and reported in all cases of rapid return of sensibility. Where doubt exists as to the presence of sensibility to light touch or difficulties arise in testing, the presence or absence of sensibility to the minor degrees of heat and cold will often settle the question.

With regard to the motor side, the actions of the individual muscles must be investigated and their electrical examination should never be omitted. Cases examined on these lines will lead to accurate diagnosis, and reported in this way will form the basis of an increased knowledge of the distribution of the loss of sensibility and motor power which result from division of a peripheral nerve.

RECOVERY AFTER COMPLETE DIVISION.

After complete division of a peripheral nerve recovery ensues if the ends of the nerve be not too widely separated, but is apt to be incomplete unless they have been brought into apposition by suture.

Cruikshank,[27] in 1795, appears to have been the first who by his experiments demonstrated the possibility of the recovery of function after division of a nerve. Swan,[28] writing in 1834, said: "When a nerve has been divided reunion in course of time generally becomes perfectly established, so that it performs its functions as well as if no division had taken place."

In reading the reports of cases published to illustrate the rapid return of sensation after suture, I found it extremely difficult to discover what form of sensibility was being tested, terms such as "he could distinctly discern the contact of the point of a pencil"[29] occurring with frequency. Most of the cases are also entirely lacking in any account of the electrical examination of the affected muscles. I have drawn my conclusions, therefore, from cases personally observed. J. K. Mitchell,[30] writing upon the same subject, says: "It will usually be found upon careful examination of the histories that the symptoms have been very imperfectly studied."

After division of a nerve containing sensory fibres, if the ends are in contact, sensory recovery follows well-defined lines and may be divided into three stages.

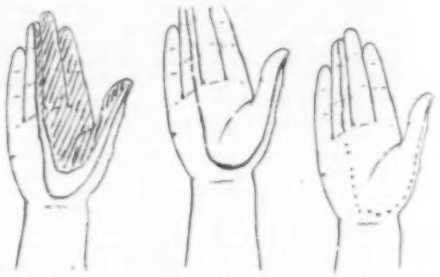
In none of the 37 cases of primary suture which I have watched did any change take place in sensibility other than that due to regeneration. It is possible, perhaps, that improvement in the appreciation of a pin-prick might take place within the first few days due to an education of the overlapping fibres from other nerves. This is, I think, the early improvement of sensation mentioned by Létiévant[31] and considered by him to be due to recovery of "supplementary sensibility" from shock—"local torpor" as he named it. Although in several instances I was able to examine the condition of sensibility within four hours of the receipt of the injury I have never yet observed it; any loss of sensibility which then existed remained until regeneration commenced. This does not apply to division of a nerve below a branch, such as the lateral cutaneous of the external popliteal or the dorsal of the ulnar nerve; here sensibility to prick, as I have already pointed out, may vary in extent from day to day.

In cases of secondary suture performed several weeks after the injury, if any improvement in sensibility had taken place, freeing and freshening the ends of the nerve resulted in the sensory loss becoming identical with that present immediately after the accident. All the restoration of sensibility had been due to reunion with the nerve centre.

I am entirely opposed to the opinion stated, among others by Tillmans[32] and Etzold,[33] that "the return of sensibility in a mixed or sensory nerve does not prove that the nerve is regenerating." In cases in which careful observations are taken immediately after the injury, all sensory recovery will be found to be due to regeneration of the peripheral end and union with the central nervous system.

At a period which varies somewhat with the nerve injured and the age of the patient, in uncomplicated cases usually from four to 12 weeks after suture, sensory recovery commences. The area insensitive to prick begins to diminish in size and these stimuli are everywhere appreciated in from four to 12 months after suture; a somewhat longer time is necessary after secondary suture. This terminates the first stage of recovery (Fig. 21 B). The whole of the affected portion of the limb is now in a condition similar to that of the intermediate zone which existed between the area of loss of sensibility to prick and the line bounding the area of insensibility to light touch. During the whole of this first stage the area insensitive to light touch remains as extensive and well defined as immediately after the injury. Gradually, its proximal border becomes indefinite and the area insensitive to light touch diminishes slowly in size (Fig. 21 C), until, at a time varying from 12 months in the cases of primary suture of one of the nerves of the forearm to about 18 months in secondary suture of similar nerves, the whole of the affected portion of the hand is sensitive to these stimuli. This may be called the second stage of recovery.

FIG. 21.



A B C

To show the method of sensory recovery after complete division of a peripheral nerve. A, Loss of sensation resulting from division of the median nerve. B, Termination of the first stage of recovery, sensitive to prick, insensitive to cotton wool. C, To show the commencement of the second stage of recovery. The area surrounded by the dotted line represents the portion sensitive to light touch.

The interval between the end of the first and the beginning of the second stage varies, with the suture, whether primary or secondary, with the nerve divided and the distance of its point of section from the periphery. In division of nerves at the wrist followed by primary suture, an interval of more

[26] Head and Sherren, p. 224.
[27] Philosophical Transactions, 1795, p. 177.
[28] A Treatise of Diseases and Injuries of Nerves, p. 91.
[29] Paget: Surgical Pathology, third edition, p. 211.
[30] Remote Consequences of Injuries of Nerves, p. 215.
[31] Traité des Sections Nerveuses, p. 27.
[32] Archiv für Klinische Chirurgie, Band xxvii., 1882, S. 1.
[33] Deutsche Zeitschrift für Chirurgie, Band xxix., 1889, S. 430.

than about six weeks is unusual in an uncomplicated case. But if suppuration has occurred, or secondary suture has been performed, the hand may remain in the first stage for a much longer period. In one instance[34] three years after primary suture of the median nerve at the wrist, no recovery of sensibility to light touch had taken place but the affected portion of the hand was everywhere sensitive to prick.

It has long been held that the distance from the periphery at which a nerve is divided affects the time necessary for the commencement and development of recovery. Vanlair's[35] experimental and Etzold's[36] clinical work on this subject are well known and widely quoted. But the whole truth is not contained in their statements, nor are the conclusions with regard to regeneration at which the investigators arrived warranted by the facts they brought forward.

While the distance from the periphery at which a nerve is divided does not alter the time necessary for the *commencement* of the first stage of recovery, yet it markedly prolongs the interval between the end of the first and the beginning of the second stages and the final recovery is much delayed. Kennedy,[37] speaking on this point said: "Restoration of sensation had occurred as rapidly when the nerve was divided at one point as at another." But in my experience this only applies to the commencement of restoration of sensibility to prick. For example, a boy,[38] divided his ulnar nerve at the elbow. 17 weeks after primary suture sensibility to prick began to be restored. But sensibility to light touch showed no sign of return until 41 weeks after suture and had not returned to the whole affected portion of the hand till 75 weeks after suture. In an adult patient,[39] who divided his ulnar nerve at the wrist, sensibility to prick began to return in 19 weeks, to light touch in 25 weeks, and the latter was appreciated over the whole affected portion of the hand 40 weeks after suture.

The method of recovery after grafting the whole thickness of the skin is important in this connexion. Sensibility returns by similar stages to those seen after division of one peripheral nerve. In a boy, aged 14 years, on whom I performed skin grafting by Wolfe's method for contracture of the middle finger following a whitlow, the graft healed by first intention. I watched the sensory recovery at frequent intervals. At the first dressing, ten days after the operation, he could feel pressure at the periphery of the graft. 30 days after operation he could distinguish between the head and point of a pin everywhere over the graft and could discriminate accurately between ice and water at 50°C. The graft was entirely insensitive to light touch. Three weeks later all forms of sensibility were restored and the discrimination of two compass points was perfect at one centimetre. The commencement of the restoration of sensibility to prick occurred at the same time as after division of one peripheral nerve, but the interval necessary for the complete restoration of sensation was shorter by many months. The time necessary for the commencement of recovery agrees with that observed by Kennedy[40] and by Henle and Wagner[41] in similar cases. Recently Lerada[42] has also shown that "tactile sensibility" returns before pain.

But after the restoration of the power of appreciating light touches with cotton wool and the minor degrees of temperature the sensibility of the part is by no means perfect. If a sharp point be dragged lightly across the skin from normal to affected parts, sensation is found to change as soon as the old boundary of the loss of light touch is reached. At this line the stimulus seems to become diffuse; patients say that "it tingles," "it seems to be more uncomfortable," and often withdraw their hands. While this area of changed sensibility is present discrimination of two points is always imperfect.

Improvement in the power of localisation constitutes the third stage of recovery. The compass test, although not used systematically in clinical work, has been known for a considerable time. It was employed by Savory[43] and by Weir Mitchell.[44] J. K. Mitchell[45] observed concerning it that "the most important sign of the perfect return of sensibility, as Tripier has insisted, is the ability to discriminate the points of the æsthiometer as two when but moderately separated." I would lay great stress upon the employment of this test; no sensory recovery should be considered to be perfect until the appreciation of the compass test is as good on the affected as on the sound limb. The time necessary for this perfect recovery varies greatly. We were able to watch but relatively few patients to this stage. It is restored more quickly after primary than after secondary suture, in the young than in the old, and often persists for years in cases that have suppurated. In dealing with the recovery of sensibility after the division of individual nerves I shall return to this subject.

The observations which we were able to make upon the restoration of deep sensibility were few. The extent of the loss and the rapidity of recovery depend in many instances upon the division of structures other than nerves, but it returned in all the cases before the restoration of sensibility to prick. The only reference to the subject which I have been able to find is in J. K. Mitchell's interesting work on the "Remote Consequences of Injuries of Nerves."[46] He says: "Deep touch usually returns before superficial."

Division of a motor or mixed nerve produces immediate paralysis of the muscles supplied by it, followed in a short time by wasting and, unless precautions be taken, by contracture of the unopposed muscles, which may render almost futile the motor recovery which is almost certain to occur. Anastomoses here play no part; when once the motor nerve of a muscle is divided paralysis persists until the nerve regenerates. Changes in the electrical excitability of the nerve and muscles follow, resulting in the development of the reaction of degeneration. The remarks which I have to make on this subject apply solely to tests applied to the muscles. Varied times have been given for the appearance of these changes in the muscles. In our experience[47] the affected muscles ceased to respond to the interrupted current in from four to seven days. This agrees closely with Mr. A. A. Bowlby's[48] conclusions but is an earlier date than that given by many authorities. At about the tenth day it may be extremely difficult to obtain any response to stimulation with the constant current; the period of heightened excitability to this current recorded by all observers, with the exception of Mr. Bowlby, was not present in any of the cases which have come under my notice. I wish to emphasise this, as it is important in connexion with the reaction of the muscles after incomplete division which I shall deal with later. The characteristic sluggish contraction accompanied by polar reversal makes its appearance about this time. The length of time after separation of the muscle from the central nervous system this reaction persists has been variously given and undoubtedly varies with the treatment used to keep up the nutrition of the muscles. Mr. Bowlby[49] has stated that it may remain for as long as from four to six weeks; in rare cases for from two to three months. But in the cases which I have watched the muscles reacted to stimulation with the constant current during the whole period between injury and recovery and many cases of retention of irritability to this stimulus long periods after division have been recorded, the longest being, I believe, 16 years.[50]

At a time, varying with the age of the patient, the nerve divided and the distance of the section from the periphery, the muscles regain their power of voluntary movement. This return of voluntary power is usually preceded by a change in the electrical reactions of the affected muscles. The contraction obtained to the constant current loses its sluggish character, is often excited by a current registering no more than two milliampères, and the polar reversal disappears; but these characteristics although usual are not universal.

Contrary to most observers we[51] found that irritability to the interrupted current was present on the date at which we

[34] Head and Sherren, Case 1.
[35] Archives de Physiologie Normale et Pathologique, tome vi., p. 894.
[36] Deutsche Zeitschrift für Chirurgie, Band xxvii., 1882, S. 1.
[37] Transactions of the Royal Medical and Chirurgical Society, 1902, p. 295.
[38] Head and Sherren, Case 18.
[39] Ibid., Case 14.
[40] Brit. Med. Jour., 1905, vol. i., p. 930.
[41] Beiträge zur Klinischen Chirurgie, Band xxiv., S. 1.
[42] Centralblatt für Chirurgie, 1906, Nr. 7.
[43] THE LANCET, 1868, vol. ii., p. 142.
[44] Injuries of Nerves, p. 183.
[45] Remote Consequences of Injuries of Nerves, p. 218.
[46] Ibid., p. 217.
[47] Head and Sherren, p. 276.
[48] Injuries and Diseases of Nerves, pp. 76 and 77; and THE LANCET, July 19th, 1902, p. 129.
[49] Ibid.
[50] Purves Stewart: Transactions of the Royal Medical and Chirurgical Society, 1902, p. 292.
[51] Head and Sherren, p. 277.

first noticed return of voluntary movement. Mr. Bowlby[52] writes, and this is the doctrine taught at the present time, "Voluntary power will return before electrical excitability, often many months, even a year before." Dr. Lewis Jones[53] says in the last edition of his book: "In cases which recover it usually happens that the power of voluntary movement will return some little time before the response to electrical stimuli." But in no case of suture of the nerves of the forearm that I have watched has voluntary power returned before irritability to the interrupted current.

RECOVERY AFTER PRIMARY SUTURE.

The modern operation of primary suture is of comparatively recent date. It is said to have been performed first by Baudens[54] in 1836, who sutured all the nerves of the brachial plexus, except the musculo-spiral, which escaped injury in a sword cut of the axilla. The patient died on the eighth day. But it is only since the time of Nélaton that the operation has been a recognised procedure. From Nélaton's[55] operation in 1864 dates the revival of the question of primary union. By this term is understood union of the divided ends of a nerve without the occurrence of complete degeneration in its peripheral end. This was the view which was held from the time of Cruikshank until 1839 when Nasse[56] pointed out that degeneration occurred in the whole of the peripheral end. Swan,[57] writing in 1834 on the union of divided nerves, said: "There appear to be two modes which nature employs for effecting the union of divided nerves—one by the effusion of coagulable lymph, the other by granulation." Nasse pointed out that degeneration occurred in the whole of the peripheral end but it was the classical work of Waller that gained general acceptance for this view. The question is one which can be settled experimentally as well as clinically. The first workers in the field after 1864 were Eulenberg and Landois[58] who failed to obtain union by first intention in the animals operated upon and criticised Laugier's case in a masterly way. Gluck's[59] oft quoted instances of "recovery by primary union" of the divided sciatics in fowls with restoration of the electrical excitability of the muscles on the eighth day and of conduction in the nerve 36 hours after section have never been confirmed. Wolberg,[60] who seemed to be a firm believer in this doctrine, was unable to obtain similar results. Falkenheim,[61] who carried out many experiments on dogs, cats, and fowls, failed to obtain it in a single instance. Albrecht[62] quotes Johnson as being unable to obtain any return of conduction in the sciatic nerves of dogs, rabbits, or fowls before the twenty-fifth day. More recently Ballance and Purves Stewart,[63] Howell and Huber,[64] Bethe,[65] and Henriksen[66] all failed to obtain any confirmation of this mode of union.

The evidence of the occurrence of "primary union" in man is also of the slenderest nature. The investigations of Türck, Arloing, and Tripier,[67] and Richet[68] paved the way for Létiévant's[69] masterly explanation that the so-called early recovery of sensibility and motion after suture was due to want of appreciation of the phenomena which follow division. Most later observers have accepted his conclusions.

From the clinical evidence Ballance and Purves Stewart,[70] Falkenheim,[71] Tillmans,[72] and Finotti[73] do not consider primary union possible. Wolberg was a firm upholder of it and Gluck[74] has published other papers in its favour. In France Chaput[75] has been a firm upholder of its possibility and more recently Reynier[76] brought two cases before the Société de Chirurgie in which primary suture of the sciatic and of the external popliteal nerves was followed by rapid restoration of function. In the discussion which followed, the majority of the speakers were of the opinion that the symptoms could be accounted for on other grounds than those of primary union. In this country Gibson and Fleming[77] appear to be the only observers who still hold the view that primary union is possible. They say, "If a mixed nerve is divided there will be paralysis of motion and sensation in the affected part with, unless union occur by first intention, well-marked reaction of degeneration. If the union be by first intention the reaction of degeneration may be partial or incomplete." Weir Mitchell[78] summed up the question from the clinical standpoint well when he said, "The evidence offered by surgeons is too open to criticism to allow of our admitting that severed nerves may unite by immediate union." With this I absolutely agree.

No instance of immediate return of function in the affected muscles with restoration of irritability to the interrupted current has been reported. Rapid return of sensibility means retention of sensibility.

Difficulties surround the accurate testing of sensation in accidental wounds before suture; this, together with a want of appreciation of the distribution of the nerves subserving deep touch and sensibility to prick, led to this error. When every case of nerve injury is examined carefully before as well as after suture, bearing these facts in mind, I venture to think that no more will be heard of "primary union."

The observations on which the following conclusions are based are drawn from the study of 37 cases of primary suture of the nerves of the upper extremity, no instance of accidental division and primary suture of other nerves having come under my notice. 37 cases of primary suture were watched for traces of early return of sensibility; in no instance did such occur. In 22 watched until the commencement of sensory recovery, the earliest date at which sensibility to prick began to be restored was six weeks, the latest was 25 weeks. The first stage was complete in from 23 to 46 weeks (excluding instances of division of the ulnar nerve below its dorsal branch). Sensibility to light touch first began to be restored in from 19 to 46 weeks (including division of the ulnar nerve below its dorsal branch). The great prolongation noticed in some instances was due to suppuration, difficult to avoid in many of the cases of accidental division at the wrist.

No correspondence seemed to exist between the time of the return of sensibility to light touch and the return to that of prick; they seemed to vary independently. In one patient[79] in whom sensibility to prick began to be restored in six weeks, sensibility to light touch did not show sign of recovery for 37 weeks, while in another instance[80] sensibility to prick did not begin to return for 11 weeks, yet sensibility to light touch began to be restored in 25. In both cases the nerve was divided at the wrist and the wound healed by first intention. Out of six cases of primary suture of the median nerve in which the wound healed by first intention, the average period necessary for the commencement of the first stage of recovery was nine weeks, the shortest being six and the longest 13. The whole of the affected area was sensitive to prick, on an average, in 27 weeks. Light touch began to be restored in, on an average, 37 weeks after suture, the shortest time being 25, and the longest 46 weeks. This form of sensibility was completely restored in, on an average, 55 weeks.

But, as pointed out before, there is another stage, the third, before sensibility can be said to have completely returned. In two cases complete sensory recovery ensued 60 and 125 weeks after suture and in two patients watched for nearly three years an area of changed sensibility to prick with defective appreciation of the compass test is still present.

After primary suture of the ulnar nerve the first sign of sensory recovery was not seen until from 13 to 16 weeks after suture, an average of 15 weeks, and the first stage was completed in from 23 to 26 weeks. After division of the nerve at the elbow in two patients the area of insensibility to prick began to diminish in size in 13 and 19 weeks

[52] Injuries and Diseases of Nerves.
[53] Medical Electricity, fourth edition, 1904, p. 271.
[54] Reported by Paulet, Létiévant: Loc. cit., p. 118.
[55] Loc. cit.
[56] Müller's Archiv für Anatomie und Physiologie, 1839, S. 405.
[57] A Treatise of Diseases and Injuries of Nerves, p. 104.
[58] Berliner Klinische Wochenschrift, 1874, Nrs. 46, 47.
[59] Virchow's Archiv, Band lxxi., 1878, S. 624.
[60] Deutsche Zeitschrift für Chirurgie, Band 18, 19.
[61] Ibid., Band xii., S. 31.
[62] Ibid., Band xxvi., Hefte 5, 6.
[63] The Healing of Nerves, p. 94.
[64] Journal of Physiology, vol. xiv., p. 34.
[65] Allgemeine Anatomie und Physiologie des Nervensystems.
[66] Loc. cit., p. 1021.
[67] Archives de Physiologie Normale et Pathologique, tome ii., 1869, pp. 33, 307.
[68] L'Union Médicale, Nov. 14th, 1867.
[69] Traité des Sections Nerveuses, pp. 139, 140.
[70] Transactions of the Royal Medical and Chirurgical Society, 1902, p. 280.
[71] Loc. cit.
[72] Archiv für Klinische Chirurgie, Band xxvii., 1882, S. 430.
[73] Virchow's Archiv, Band cxlii., S. 133.
[74] Berliner Klinische Wochenschrift, 1890, 19; 1895, 28.
[75] Archives Générales de Médecine, 1884, pp. 205, 333.
[76] Bulletins et Mémoires de la Société de Chirurgie, vol. xxvii., 1901 pp. 382, 439, 445.
[77] A System of Medicine, Clifford Allbutt, vol. vi., p. 644.
[78] Injuries of Nerves, p. 239.
[79] Head and Sherren, Case 4.
[80] Ibid., Case 5.

and was completely restored in 25 and 60 weeks. In two instances of division at the wrist light touch began to return in 22 and 25 weeks and had completely returned in 40 and 55 weeks. In a patient in whom suppuration occurred this form of sensibility showed no sign of recovery 45 weeks after suture. One patient reached perfect sensory recovery after 84 weeks and two only after three years. In the two patients in whom the nerve was divided at the elbow light touch began to be restored in one in 41 and was complete in 75 weeks; in the other it did not commence for 86 weeks.

After division of the nerve below its dorsal branch no time can be fixed for the commencement of the first stage of recovery, for here the amount of loss of sensibility to prick varies, but on an average of four cases it had completely and finally returned in 19 weeks. In two uncomplicated cases light touch began to be restored 11 and 18 weeks after suture and was complete in 20 and 42 weeks. The earliest recovery of sensibility to prick occurred after division of the median, but the time required for its complete restoration differed little from that necessary in the cases of the ulnar nerve.

After primary suture of one of the nerves of the hand, no matter at what level, sensibility to prick will begin to return in from six weeks to four months. This agrees with the conclusions of Howell and Huber[81] with regard to the first sign of recovery after division of the median and ulnar nerves.

After primary suture of one of the nerves at the wrist sensibility to prick will be completely restored in from four to six months and the hand will have become sensitive everywhere to light touch at the end of a year. If the nerve be divided at a higher level much longer time is necessary before the commencement of the restoration of sensibility to light touch and its final completion.

With regard to the recovery of the muscles, it has long been the usual teaching that the further the lesion from the periphery the later the recovery, and the nearer the muscle to the seat of the division the earlier its restoration. Etzold's unique series of six cases of primary suture of the brachial plexus proved this: in all the cases the muscles nearest to the seat of the lesion first regained their voluntary power. In five cases of primary suture of the ulnar nerve at the wrist motion first returned to the paralysed muscles on an average of 50 weeks after suture and contractility to the interrupted current was first re-discovered on the same date. In three patients the appearance of the hand became again normal in 12 months, 20 months, and two years after suture. In two instances of division of the nerve at the elbow, in one 100 weeks elapsed before voluntary power returned to the muscles of the hand; in the other the flexor carpi ulnaris regained voluntary power and reacted to the interrupted current 66 weeks after suture, but no recovery had taken place in the muscles of the hand 17 weeks later. After division of the median nerve at the wrist voluntary power returned to the paralysed muscles on an average 40 weeks after suture. Reaction to the interrupted current was first noticed on the same date, with the exception of one case, in which the muscles reacted five weeks before any return of voluntary power could be discovered. After division of both nerves at the wrist the abductor-opponens group of muscles always acted and reacted before those supplied by the ulnar nerve. Howell and Huber[83] collected from the literature all the cases of primary suture that had been reported and found that motion as well as sensation reappeared earlier after division of the median than after division of the ulnar nerve.

PROGNOSIS AFTER PRIMARY SUTURE.

Many papers have been published dealing with this question, but most of those which are widely quoted deal only with the study of cases collected from various sources. Of these, Howell and Huber's paper[82] contains a valuable table of all the reported cases. From the study of these cases they concluded that "it is very favourable, the more so the younger the patient." The papers of Willard,[84] Tillmans, Chaput,[85] and Bank[86] are of a similar character. The last-named attempted to discover the after-history of the cases of nerve suture performed in von Esmarch's clinic during the 20 years preceding the publication of his paper; he was only able to examine two personally. These writers came to the conclusion that in from 66 to 80 per cent. of the cases of nerve suture recovery ensued. But the fallacies are so numerous and obvious in cases gathered in this manner that the results are of little value. The only way in which the question can be settled is by the personal examination of a number of cases from suture to recovery. Mr. Bowlby appears to have been the first to adopt this method. He observed the results of 28 cases of primary suture but in many of them the first note seems to have been made several years after suture. He considered that 16 were successes, eight were partial successes, and four were failures. But in some of the cases which are counted as successes no note is made as to the electrical excitability of the muscles and in another instance a case is counted as a success, although at the time the last note was made the muscles did not respond to stimulation with the interrupted current. In conclusion he states that "the probability is that function will be restored." Gleiss,[87] from the examination of 11 patients operated upon in Bruns's clinic between the years 1882-91, found that out of the 13 nerves sutured all had "healed" except one. Most of the cases had not been seen in the interval. J. K. Mitchell's book on the "Remote Consequences of Injuries of Nerves," based upon the examination of some of the cases published 23 years previously in Weir Mitchell's work, is disappointing from the point of view of prognosis. Many patients of necessity could not be traced and of those that could be found, owing to the distance from Philadelphia at which many lived, the examinations had to be carried out by different observers.

By complete recovery of a nerve I understand perfect appreciation of all sensory stimuli and the return of voluntary power and electrical excitability to the affected muscles. It has been doubted by some observers[88] whether a recovery as complete as this ever occurs after division of a large nerve trunk. I can say quite definitely that it does. The affected part may be restored to a condition indistinguishable from its fellow on the sound side. In judging of the completeness of the motor recovery we must bear in mind changes secondary to injuries of tendons; thus the condition of the fingers, owing to changes secondary to tendon injuries, may be bad, yet the nerve have recovered perfectly. If for any reason movement is limited the muscles, although they have regained electrical excitability and the power of voluntary motion, remain wasted and will not recover their former size and strength.

It will have been noticed when I was speaking of the recovery of various nerves that no case was a failure; recovery commenced in every instance of primary suture watched for a sufficiently long period. Out of six cases of primary suture of the median nerve watched for over a year, two for four years, three for over three years, and one for 13 months, perfect recovery ensued in three. In one instance at the end of 132 weeks sensory recovery had reached the end of the second stage but the muscles had not fully recovered; in another at the end of 70 weeks muscular power and electrical excitability had returned, but the second stage of sensory recovery was not quite complete. Of the seven cases of division of the ulnar, all of those watched for two years made a perfect recovery. 84, 99, 123, and 155 weeks after suture four patients had completely recovered. Complete muscular recovery ensued in two others, but at 60 and 71 weeks after suture the third stage of sensory recovery was not complete. In one, in whom the nerve was divided at the elbow the second stage of sensory recovery had commenced at 86 weeks and motor recovery at 66 weeks. In three instances of suture of both nerves at the wrist muscular recovery ensued and sensory recovery was almost perfect 68, 104, and 115 weeks after suture, although in appreciation of two points was not completely restored. Thus, out of 16 cases of primary suture watched for over a year all recovered muscular power and the muscles reacted to the interrupted current. All regained sensation to ordinary stimuli. 11 of these were watched to perfect sensory recovery and this will in all probability be attained in the remaining five cases.

Of the cases of primary suture performed at the London Hospital prior to 1901, I was able personally to examine 11 cases. In four instances the ulnar, in six the median, and in one both nerves had been divided at the wrist. Of the instances of primary suture of the ulnar, in two

[81] Journal of Physiology, vol. xiv., pp. 23, 24.
[82] Loc. cit.
[83] Ibid., p. 34.
[84] Philadelphia Medical News, vol. lxv., 1894, p. 374.
[85] Archives Générales de Médecine, 1884, pp. 205, 333.
[86] Ueber die Enderfolge der Nervennaht: Inaug. Diss., Kiel, 1893.
[87] Beiträge zur Klinischen Chirurgie, Band x., 1893, S. 387.
[88] Thorburn, Williamson, and Tillmans: Loc. cit.

the condition of sensation could not be distinguished from that of the sound hand; in one, three and a half years after suture recovery had not progressed beyond the end of the second stage, and in one no recovery had ensued in four years. In the two first cases voluntary power and reaction to the interrupted current were perfectly re-established; in the third, although the muscles reacted to the interrupted current, no voluntary movement was possible; in the last, a case which suppurated, no recovery had resulted. Of the six cases of suture of the median, in two the sensibility was perfect. In three in whom suppuration had occurred, an area of changed sensibility to prick with faulty appreciation of two points was present one and a half, two and a half, and six years after suture. One patient showed the first stage of sensory recovery at the end of three years. In all the cases, with one exception, 18 months after suture, motor power and electrical excitability had completely returned. In the one patient in whom both nerves had been divided at the wrist seven years previously, both sensation and muscles were perfect. Thus, from an examination of the older cases, in which the percentage of suppuration was much greater, there was only one instance of failure, and in this case the wound was infected and cellulitis resulted, necessitating numerous incisions.

After primary suture of the nerves of the forearm, uncomplicated by suppuration, recovery will ensue and in all probability become perfect. Muscular power and irritability to the interrupted current will be restored to the paralysed muscles in about a year, but three years may be necessary to complete sensory recovery.

RECOVERY AFTER SECONDARY SUTURE.

The problem of recovery after secondary suture is by no means so simple. Said to have been first performed by Nélaton[19] in a case of division of the median nerve in 1864 and by Jessop[20] in this country, opinion on the method of recovery has been almost as much divided as after primary suture. The question has recently been revived and studied particularly by Kennedy.[21]

I have been able to watch 14 cases of secondary suture uncomplicated by suppuration from the time of operation in most of the cases for over a year. (See Table I.) In no instance did any change take place in the condition of sensibility until four weeks after suture, the earliest being on the thirtieth day. Much greater variability obtains in the time at which the various stages of sensory recovery begin and terminate than after primary suture. In four cases of secondary suture of the median nerve the first sign of recovery was noted in from four to 31 weeks and the commencement of the second stage 67 to 90 weeks after suture.

No instance of secondary suture of the whole ulnar nerve

TABLE I.—RECOVERY AFTER SECONDARY SUTURE.

No.	Nerve.	Weeks after division.	Sensory.			Motor.	
			First stage in weeks.	Second stage in weeks.	Final result.	Voluntary power.	Electrical reactions.
1	Median (at wrist).	54	Began 31; complete 36.	Began 90; complete 99.	Area of changed sensibility to prick and faulty appreciation of compasses at 157 weeks.	53 weeks.	Reacted to interrupted current in 53 weeks.
2	Median (at wrist).	22	Began 6; complete 27.	Began 67; complete 93.	—	69 weeks.	Reacted to interrupted current in 53 weeks.
3	Median (at wrist).	96	Began 4; complete 29.	Not commenced at 44 weeks.	—	29 weeks.	Reacted to interrupted current in 29 weeks.
4	Median (at wrist).		Began 24; complete 64.	Began 81; not complete in 117.	—	117 weeks.	Reacted to interrupted current in 90 weeks.
5	Ulnar (below dorsal branch).	4	Complete 8.	Began 22; complete 37.	Area of changed sensibility and faulty appreciation of the compass test at 167 weeks.	58 weeks.	Reacted to interrupted current in 58 weeks.
6	Ulnar (below dorsal branch).	70	Complete 25.	Began 36; complete 61.	Area of changed sensibility and faulty appreciation of the compass test at 120 weeks.	53 weeks.	Reacted to interrupted current in 53 weeks.
	Ulnar (below dorsal branch).	16	No change in 3 weeks.	—	—	—	—
8	Ulnar (below dorsal branch).	11	Complete 17.	Began 30; complete 91.	—	91 weeks.	Reacted to interrupted current in 47 weeks.
9	Median and ulnar (at wrist).	30	Began 23; complete 35.	Began 51; complete 88.	—	88 weeks.	Reacted to interrupted current in 88 weeks.
10	Musculo-spiral (lower third of arm).	5	—	—	—	Extensors of wrist, 30 weeks; extensors of fingers and thumb, 40 weeks. No difference between forearms at 60 weeks.	All reacted to interrupted current at 47 weeks.
11	Upper and middle trunks of brachial plexus.	9	No change in nine; improved in 182; clear in 286.	Had commenced 234; not complete 338.	—	Biceps, 182 weeks; flexor muscles at 286 weeks.	Biceps reacted to the interrupted current at 182 weeks. At 286, triceps, supinator longus, flexors, and extensors of the wrist and fingers. At 333 all reacted to interrupted current.
12	Anterior primary division of fifth cervical nerve.	12	No change in 13.	—	—	—	—
13	External popliteal (below lateral cutaneous branch).	70	Began 10; complete 92.	Began 92; complete 101.	—	Tibialis anticus 92 weeks. No further improvement at 192 weeks.	Tibialis anticus reacted to interrupted current at 92 weeks.
14	Posterior tibial (at ankle).	51	No change in 6 weeks.	—	—	—	—

[19] Tillmans: Archiv für Klinische Chirurgie. Band xxii., 1882, S. 1.
[20] Brit. Med. Jour., vol. ii., 1871, p. 640.
[21] Philosophical Transactions of the Royal Society, 1897, vol. clxxxviii., p. 257; Brit. Med. Jour., vol. i., 1903.

has come under my notice, the results, both sensory and motor, produced by its division being obvious and leading to its diagnosis and primary suture. I was able to watch four cases in which it had been divided below the dorsal branch. For reasons which I have already given I have not considered the time at which the first stage of recovery commenced but the second began in from 22 to 30 weeks after suture. Among the four median cases the end of the second stage was reached—in two at 93 and 99 weeks after suture, in one it was not complete in 116 weeks, and in the remaining patient it had not commenced in 44 weeks. In one patient 157 weeks after suture the hand was still in the third stage of recovery. Three instances of secondary suture of the ulnar nerve reached the end of the second stage 37, 61, and 91 weeks after suture, and in two of them 108 and 167 weeks after suture the third stage was not complete.

It will be seen that so far I have watched no case of secondary suture to complete sensory recovery. In all the patients some difference could be appreciated between the two limbs, an area of changed sensation remaining with faulty appreciation of two points. In no instance after secondary suture of the nerves at the wrist did voluntary power return before irritability to the interrupted current, but in one instance of secondary suture of the musculo-spiral, voluntary power began to return in 30 weeks to the extensors of the wrist, in 40 to the extensors of the fingers, and all reacted to the interrupted current in 47 weeks. But the boy was very intolerant to this form of stimulation. In two instances of median suture, voluntary power and electrical excitability were first rediscovered at the same date, 29 and 53 weeks; in the other two the muscles responded to this current 53 and 90 weeks after suture but they did not act voluntarily until 69 and 116 weeks. In two instances voluntary power and excitability to the interrupted current reappeared together, 53 and 58 weeks after suture of the ulnar nerve; in one case the muscles reacted to the current in 47 weeks but did not act voluntarily for 71 weeks. In the two instances in which secondary suture of the brachial plexus was performed, in one whom the upper and middle trunks had been sutured no change took place in sensibility during the nine weeks that he was under observation. He was not then seen for three and a half years. At this time the first stage of recovery had advanced considerably but was not complete until four and a half years after suture. The second stage had not commenced in four and a half years and was not complete in six and a half years. At the end of three and a half years the biceps and flexors of the wrist and fingers acted and all except the intrinsic muscles of the hand reacted to the interrupted current; these gave no response until two years later, but no further improvement in voluntary power ensued. This was probably due to the contractures which had taken place. The other instance was suture of the anterior primary division of the fifth cervical nerve; no change in the sensibility had taken place when last seen 13 weeks after suture.

Turning now to the lower limb, I have been able to watch one case of secondary suture of the external popliteal nerve for four and a half years. The first stage of recovery commenced in ten weeks but was not complete until 92 weeks; the second had commenced at this date and was complete in 101 weeks. The tibialis anticus muscle acted voluntarily and reacted to the interrupted current 92 weeks after suture, but no further muscular improvement took place. In one instance of secondary suture of the posterior tibial nerve at the ankle no sensory change took place during the six weeks that he was under observation.

It will be seen that sensory and motor recovery follow the same stages as after primary suture and that the march of motor recovery is identical. But the time of commencement of the stages differs markedly. The time necessary for the commencement of the first stage was in two instances shorter than that seen after primary suture but was usually much longer, but the variations were great. The time at which the second stage commenced was almost double as long as after primary suture. Much less variation occurred in the recovery of motion, but the time necessary was in all cases longer than after primary suture.

HOSPITAL SUNDAY FUND AT BRISTOL.—Up to the present £2069 have been received from the collections at 447 places of worship for the Bristol Hospital Sunday Fund. In 1905 £2053 were received from 425 collections.

ON BILIARY CALCULI.[1]

BY E. STANMORE BISHOP, F.R.C.S. ENG.,

HONORARY SURGEON, ANCOATS HOSPITAL, MANCHESTER; OPERATING SURGEON FOR DISEASES OF WOMEN, JEWISH MEMORIAL HOSPITAL, MANCHESTER; VICE-PRESIDENT, BRITISH GYNÆCOLOGICAL SOCIETY, LONDON, ETC.

A TYPICAL attack of gall-stone colic inevitably fixes itself indelibly on the mind of anyone who has either suffered or observed it. The intense pain, the frequently incessant vomiting associated with ague-like shivering, the yellow colouration of the patient's face attending or following the attack and the white lard-like stools with the bile-stained urine make up a clinical picture which seems complete and unmistakeable. But it is not always in this way that gall-stones signalise their presence in the human economy; and it is well to realise from the very outset that such symptoms do not depend upon the presence of the calculi alone but upon their presence when complicated with inflammation of the channels in which they are situated. A large number of persons—variously estimated at from 5 per cent. to 12 per cent. of the entire population—are found on post-mortem examination to contain biliary calculi, but these concretions have never caused their owners any pain or shortened their lives in any way. It is only when the canals in which they lie become inflamed from any cause that trouble ensues.

Cases of gall-stones may therefore primarily be divided by a broad line into those which are associated with inflammation and those which are not. Theoretically, this position is open to question, since it may be said that the very presence of the concretions themselves pre-supposes the entrance into the biliary ducts of micro-organisms and the consequent results of their presence, but practically and clinically this distinction is of great value.

If inflammation of the gall-bladder and ducts plays so powerful a part in inducing symptoms, may not the cases in which these are present be themselves divided according to the grade of inflammation present? This has been done already up to a certain point. It would appear that this point might still be carried farther with advantage. The advantage so gained and recognition of the increased importance of the part inflammation plays will react both as to diagnosis and as to treatment. Already certain conditions are acknowledged as due to super-acute inflammation. Phlegmonous cholecystitis and gangrene of the gall-bladder may be cited as instances. The ordinary well-known and easily recognisable cases of biliary colic will fall into the class in which acute inflammation plays a part, producing painful peristaltic action in the channels so affected. Under the head of subacute inflammation may be grouped cases which, although due to the presence of biliary calculi, do not present the striking symptoms of the first and second classes, easily referable to the biliary tract, but rather reflex ones, often pointing to gastric or intestinal conditions, for which they may easily be mistaken and of which the first case I will mention is an illustration. In these cases one's attention is distracted from the real *fons et origo mali* by complaints which direct one's investigation into other channels. But in all it is the inflamed condition of the tissues themselves and not the concretions contained within them that is the essential cause of most of the symptoms produced.

CASE 7. *Gall stones simulating chronic gastritis.*—In June, 1894, I was consulted by a female, aged 35 years, who had been married ten years. She had had no children or miscarriages. Menstruation was always regular and began at 16 years of age. The amount lost was small, however, and she was much troubled by leucorrhœa. For the last two years there had been some uterine prolapse with tenesmus. She had seen several medical men, who advised vaginal douching with astringent solutions. For three years she had suffered from what she considered to be cramp of the stomach from time to time. The first attack lasted an hour. The next occurred 12 months later, then two or three with but a short interval; the next six months before being seen; then three weeks elide; and two more during the week immediately preceding examination. These attacks began

[1] A paper read before the Manchester Medical Society on Nov. 1st, 1905.

suddenly and gradually disappeared. They were characterised by severe pain on either side over the anterior end of the eighth rib passing round to the back, which came on some little time after food and was relieved by heat. There was no vomiting or flatulence. The skin later became a muddy yellow and this lasted for a week or two, gradually fading away. There was no loss of flesh. The urine became dark and muddy after each attack, but the stools did not become white. There was no gastric dilatation and the gastric juice contained pepsin and free hydrochloric acid. Murphy's test was then unknown. On June 26th an exploratory incision was made; the gall-bladder and cystic duct contained calculi which were removed and the pain disappeared.

I have spoken of the acute class as easily recognisable, and so, no doubt, in many cases it is, but even in this many sources of error are present and may cause great difficulty in diagnosis. The following cases illustrate some of these and are given as examples.

(*a*) Two conditions may be present simultaneously, and one may be so obvious and so capable of explaining all the symptoms present that it may seem needless to look for any other cause.

CASE 35. *Single gall-stone; symptoms referred to adherent umbilical hernia.*—The patient, a married woman, aged 47 years, was admitted on April 8th, 1903. She had complained for some years of recurrent attacks of pain in the epigastrium. 15 years ago umbilical hernia appeared during her last pregnancy. Six years ago this was operated upon and recurred about four months later. Since that time the pain has recurred more often and more severely. As it was always worse when there was increased tension in the hernia the attacks were attributed to this, and radical cure was performed on April 13th, 1903. A coil of intestine was found imbedded in very fat omentum which was adherent to the edges of the umbilical opening. Below this and internal to the muscular abdominal wall a second larger cavity was found apparently formed in the subperitoneal fat. This also contained bowel and omentum which were easily reduced into the abdominal cavity. The sac was dissected out and the muscular wall was closed by mattress silver sutures. After this operation she was much more comfortable but spasmodic attacks of pain still recurred, now more definitely referred to the right hypochondrium, and passing upwards to the right shoulder. She now for the first time informed us that 15 years ago she had a similar number of attacks lasting for seven months. These attacks were clearly distinguished in her own mind from the hernial pain. Six weeks after the hernial operation, the parts being perfectly firm, she was sent away to recruit but was readmitted on August 25th. On the 27th a vertical incision was made in the right Langenbuch line. The gall-bladder was easily found but deep down below the liver. It was small and deeply congested in colour. It contained one large-sized unfaceted stone. Nothing could be felt in the ducts. The edges of the opening in the bladder were stitched to the parietal peritoneum and a rubber tube was placed in that viscus. Pus and mucus escaped for several months. A sharp bilious attack with vomiting and followed by jaundice occurred on Oct. 4th, with a return of pain in the shoulder. The wound was opened up and a probe was passed down the duct without encountering any obstacle. Salicylate of soda in 15-grain doses was given with good result; the colour cleared up and pain disappeared from the shoulder. It could, however, still be felt in the right hypochondrium. In another month this also had disappeared.

(*b*) Or there may be two sets of symptoms present, due to two different causes, and one may so dominate the other as to obscure its importance. In the following case hysterical attacks were the confusing factor.

CASE 3. *Difficulty because two conditions present.*—In June, 1892, I was consulted by a woman, 36 years of age. She was married but had had no children. She had been an invalid for several years and had consulted several physicians, by one of whom she was said to be suffering from congested ovaries. Her illness was characterised by paroxysmal attacks, which appeared to be divisible into two classes. The first occurred at the menstrual periods. At these times she suffered from severe headache, became sick and faint, and occasionally vomited, the vomit consisting simply of the gastric contents, after which she would have a slight rigor and recover. The night after each menstrual period ceased there was some suprapubic pain. She also experienced pain during coition and the act caused faintness and nausea. The second series of attacks were three in number. The first occurred 13 years before, or two years before her marriage; the second six years before examination and lasted more or less for eight months; and the third began 14 days previously and was still affecting her. These attacks occurred independently of menstruation and were characterised by paroxysmal pain, referred to the right hypochondrium, were severe, and culminated in the vomiting of bile and incontinent defæcation. These attacks were followed by transient jaundice. On June 15th operation was performed and seven gall-stones were removed. She recovered perfectly from the biliary attacks, but the others still continued up to, and after, her discharge from the hospital.

(*c*) There may be a legitimate doubt as to which of two alternative explanations of the symptoms should be taken. One symptom may be marked, whilst the rest are more or less doubtful. This is especially the case when a mass is felt, as in the two succeeding cases, which in position or mobility may suggest a moveable and displaced kidney, the other symptoms present being almost equally explainable by either a kinked ureter or biliary calculus.

CASE 4. *Ulceration of gall-stone through duct; shows difficulty in diagnosis from a mobile kidney and the evil results of preliminary fixation to abdominal wall.*—In March, 1884, a spare, healthy-looking married woman, aged 43 years, was admitted to Ancoats Hospital. She had been married for 19 years. She had had nine children, the youngest being six months old. Three years previously to admission she had fallen across the corner of a table, striking her right side against it. A year afterwards she began to find sharp spasmodic pain in the right hypochondrium, associated with nausea; sometimes actual vomiting occurred which always relieved the suffering. These attacks were becoming more frequent. The abdomen was rather prominent. On the right side, midway between the umbilicus and the anterior iliac spine and on a level with the iliac crest, could be felt a firm, resistant mass with a rounded lower extremity. The upper extremity could not be felt. The sensation was that of a solid mass. Sometimes, she said, it disappeared almost entirely. Over the mass itself the percussion note was dull, above, nearer to the liver, the note sounded less dull but not absolutely clear. Behind, in the renal area, the percussion note sounded clearer than on the opposite side and there was a want of the usual resistance but any attempt to press the mass into the renal region caused pain. The mass was not fixed but only slightly moveable. There had never been any jaundice nor any extremely acute pain. The urine was normal. There had never been any partial or total suppression of urine. On March 27th an incision was made through the outer fibres of the right rectus muscle vertically over the tumour. This was demonstrated to be the enlarged gall-bladder and it was very tense. But little examination was made of it at the time since it was adherent to parts around and at that time we looked upon adhesions as safeguards against infection of the general peritoneum; therefore its fundus was lifted into the wound and fixed there by sutures uniting its peritoneal surface to the parietal peritoneum. On April 4th the gall-bladder was opened, it being now firmly attached to the abdominal wall; about six ounces of clear mucus escaped. A probe introduced detected no stone. On the 8th, however, three gall-stones of a comparatively large size appeared in the wound and were removed. They were faceted and weighed together two drachms and ten grains. On the 10th two more saddle shaped stones were obtained in a similar way. No more could be felt with a probe. On the 13th bile and a small amount of pus appeared. On May 11th the opening had shrunk to a small sinus. For a week there had been rigors with a hectic temperature. The patient became apathetic and evidently septic. On May 22nd hypostatic pneumonia was found on the *left* side and on the 26th she died. At the post mortem examination the gall-bladder was found to be shrunken to the size of the little finger. No pus was found anywhere but on lifting out the liver and ducts a stone dropped into the peritoneal cavity. An opening of the size of a sixpence was found in the common duct through which it had ulcerated. The opening was ragged and it and the parts around for a considerable distance were stained with bile. All the other abdominal organs appeared to be healthy.

CASE 61. *Case diagnosed by four medical men as one of dislocated kidney with intermittent hydronephrosis; removal of gall-stones; recovery.*—The patient, a married woman, aged

37 years, was admitted on Nov. 6th, 1905. She had complained for three years of paroxysmal pain occurring at intervals, attacks of which were rapidly becoming more frequent. During the fortnight before admission 20 such attacks had been noted. The pain was located by her over the right lumbar region, both anterior and posterior. It always began suddenly and was sometimes followed by vomiting and sometimes by sweating. It lasted for a few hours if not relieved by drugs and ceased suddenly. There had never been any jaundice or loss of colour in the stools; the urine had sometimes been deep red. After each attack of pain she had noticed a free discharge of limpid urine. No blood, albumin, casts, crystals, or sugar were found in it. A lump had been noticed in the right hypochondrium and anterior lumbar region which was not always present. It moved with respiration and was tender on pressure. Her own medical adviser believed that he had been able to reduce it into the renal fossa with relief to the patient. Murphy's test gave a positive result. On Nov. 10th operation was performed, Rutherford Morison's incision being adopted. The gall-bladder and cystic duct were full of small faceted gall-stones, about 40 being removed. A tube was tied in and the abdominal wall was closed. Uninterrupted recovery followed.

(*d*) The symptoms may point directly to a totally different condition.

CASE 50. *Very misleading symptoms suggesting some growth near the ureter; gall-stone found; troublesome hæmorrhage requiring gauze packing; prolonged loss of bile.*—The patient was a male, aged 32 years, sent by Dr. R. A. Paton of Harpurhey on Feb. 27th, 1904. For three years the patient had complained of occasional and isolated attacks of pain, lasting on the first occasion for three weeks and later for shorter periods, referred to a point one inch outside and to the right, and on the level, of the umbilicus. This pain extended downwards and outwards for two inches. It was sometimes felt in the back at a point equivalent to the one in front. The pain was always in the same place and never passed down into the penis or towards the right shoulder. There was never any vomiting or jaundice. At the point referred to a small elongated mass could be felt, of the size and shape of a monkey nut, lying in the course of the ureter and apparently upon the psoas muscle. It appeared to move slightly with respiration but owing to its depth this could not be certainly ascertained. The liver was not enlarged. There was a clear percussion note over the appendical area. After urination, which was not painful, some dribbling occurred which went on for several minutes. The urine itself was normal. Murphy's test was not used, as the symptoms did not appear to indicate the presence of biliary calculi. On March 10th an exploratory incision was made over the point referred to on the right side with the umbilicus as its centre. Nothing was found in, or connected with, the ureter, but a very hard and firmly adherent gall-bladder was discovered, covered by the transverse colon, to which it was also closely adherent. Its hepatic attachment was broad, as if plastered over the under surface of the right lobe. The adhesions all around were too firm to be torn through and had to be divided by scissors; several small vessels were tied. When the bladder was freed it was brought towards the surface and sponges were packed around. Its extreme fundus was very firm and the wall at this point was fully a quarter of an inch thick. This was incised and some bile escaped. The finger passed down outside, forced out a single unfaceted mammillated stone with a nipple-like extremity which had lain in the cystic duct. No other was found. A drainage-tube was placed in the bladder and secured in the usual way. Venous blood persistently welled up from below the gall-bladder. An attempt was made to under-run some veins in its wall from which the blood came and so to ligature them, but ultimately gauze-packing was resorted to and was successful. The abdomen was closed by figure-of-8 silver-wire sutures. The drainage-tube came away on the sixth day; the gauze was not all removed until three weeks after the operation. On the thirtieth day the flow of bile had apparently ceased; the silver-wire sutures were removed from the abdominal wall. Next day the dressings were again stained; the next day they were dry, but they were stained again on the thirty-third day. On the fortieth day the flow was free. The flow of bile did not definitely cease until the fifty-first day. During all this time bile was normally present in the fæces. The ultimate recovery was perfect.

Sufficient has perhaps been said as to the difficulties which sometimes attend the diagnosis of these cases, though this by no means exhausts the list; and if this is true of cases in which acute cholecystitis and choledochitis are present, it is still more true in cases where only reflex symptoms can be observed, as in those due to subacute inflammation of these channels where the symptoms noted point to affections of other organs, usually the stomach or intestines. If the symptoms generally relied upon for the diagnosis of biliary calculi are examined it will be evident that no one of them is characteristic. Spasmodic intermittent pain in the right hypochondrium is, perhaps, the most constant and deserves the most confidence. Yet similar pain may be produced by renal calculus, duodenal ulcer, a thickened and contracted pylorus, or even localised colic from indigestible or improper food. Vomiting which gives relief is common to far too many pathological and even to some physiological conditions to count for very much as a means of differentiation, whilst in some cases of biliary calculi, proved to be such by operation, this symptom may be entirely absent, as in Case 50, or may give no relief, as in Case 49, to be afterwards detailed. Jaundice, transient or persistent, depends so entirely upon the position of a stone, its presence in a situation which impedes the flow of bile from the liver into the intestine, and not in any way upon the mere existence of a concretion, that its absence is in no way distinctive. Moreover, it is caused equally by pressure on the common duct from without by tumour or adhesions, by swelling of the mucosa lining the duct within, or by essential disease of the liver itself. The discovery of calculi in the fæces is evidence of their previous existence. It is no proof that any remain. The decolouration of the fæces and the presence of bile in the urine are in the same category with jaundice, like it depending entirely upon the obstruction to the biliary flow, and are not present when calculi exist in the gall-bladder and cystic duct alone.

The discovery of a tumour below the liver is perhaps the most misleading symptom of all. The idea that such a thing is to be expected in cases of biliary calculi and that its absence contra-indicates their presence has caused more mistakes in diagnosis than any other. Courvoisier long since pointed out that in 80 per cent. of cases of biliary calculi no tumour can be felt and that in 90 per cent. of those cases in which such a mass is visible or palpable it indicates the existence of some other condition than that of the presence of concretions in the biliary passages. In by far the majority of cases the gall-bladder is deeply seated and firmly contracted, altogether out of the reach of the examiner's hands be they never so sensitive. Case 38 is a practical demonstration of this fact; it also shows the impossibility of detecting the gall-bladder by touch in certain cases.

CASE 38. *Case in which a single gall-stone was apparently caused by hydatids contracted in New Zealand 44 years before operation and 17 years before any symptoms of biliary colic.*—The patient, an unmarried woman, aged 48 years, was sent by Mr. J. D. Willis of Gorton on April 18th, 1903. She went to New Zealand when four years old, remaining there 18 months. When 16 years old she had a severe attack of pain in the right hypochondrium, which did not last long. When 21 years old she had a long illness, being ill for eight months, during the last four months of which she was confined to bed and was jaundiced. This illness culminated in the suppuration and bursting of a hydatid cyst, which emptied itself by an opening in the epigastrium. She had never been jaundiced since. Five or six years ago the attacks of pain which had recurred infrequently since her illness became very intense and frequent for about 18 months; then they became much less, but during the last three months they had recurred much more frequently—for the last few weeks two or three times a week—and were much more severe, requiring hypodermic morphine for their relief. These attacks had never had any relation to the times of menstruation and had not altered in character since the menopause which occurred two years ago. The stools had never been white and the urine had never contained bile. The attacks had sometimes been associated with vomiting but not lately. Each attack began with a dull aching over the hepatic region or with a feeling of dyspepsia. The acute pain sometimes began suddenly, sometimes remained subacute for a long time. There was occasionally a dull pushing sensation, occasionally a shooting sensation which made her jump. There was aching across the back at the level of the angles of the scapulæ. This never went up into the right shoulder. No mass was to be felt. An incision was made in the right

oblique line. A long Riedel's lobe lay below on opening the peritoneum. On drawing this up the omentum was found to be firmly adherent to its under surface, to the stomach, the pylorus, the colon, and the duodenum; some of these adhesions were so firm as to require division by the scissors. The base of the caudate lobe externally was thinned transversely and marked by a fibrous line, not seen on the internal surface. The gall-bladder was found contracted and deeply placed. In it, besides a little muco-pus, was a single dark brown calculus, unfaceted, and mammillated on its outer surface. It was of about the size of a hazel-nut. Nothing was to be felt in the ducts. The calculus was removed and the edges of the bladder were sewn to the parietal peritoneum, a drainage-tube being placed in its lumen and packed around with iodoform gauze. There were slight shock and some vomiting, the latter lasting for three days; but after removal of the sutures the parts rapidly healed and she went home a month after operation perfectly well. Mr. Willis writes (Feb. 25th, 1904): "Miss —— is away nursing a relative. Her recovery is perfect. No reminders except a good appetite, robust health, and a delightful sense that, after all, life *is* worth living"; and again, Nov. 29th, 1905: "Is in excellent health and has had no reminders."

The suggestion that by palpation the crepitus produced by the rubbing of the calculi against one another can be detected is *a fortiori* in most cases impossible and in all improbable.

The contemporaneous presence of two or more of these symptoms greatly increases the probability of the diagnosis but does not render it certain. During the last two years, however, Murphy of Chicago has recommended a new method of investigation which in my hands has proved extremely useful, and may, I believe, be relied upon. It is based upon the fact already insisted upon, that in all cases of biliary calculi which present symptoms—therefore in all which are clinically known to us before death—some amount of inflammation of the biliary channels is invariably present. The structures so inflamed are in consequence tender to pressure. This tenderness has, of course, been already observed, and Mayo Robson has indicated a line along which such tenderness may be observed. This line extends from the tip of the ninth costal cartilage to the umbilicus. The point of its greatest intensity is known as Robson's point and is situated one inch outside and above the umbilicus on the right side. But anyone who will observe a vertical section of the body at this level will be struck by the fact that pressure so applied directly downwards as the patient lies in the supine position is not likely to affect a deeply seated gall-bladder or ducts, and it is necessary perhaps here again to insist on the fact that in the majority of these cases the gall-bladder is both contracted and lies at some distance below the surface. Moreover, it may be still further protected from pressure by a Riedel's lobe, as in Case 38 already mentioned. In any case it is protected, unless enlarged, by the overhanging right lobe of the liver. The tissues behind it in this position are yielding and permit the affected parts to sink still more deeply away from the pressure which it is intended should be brought to bear upon them. This method may, and often does, succeed, but it is not the best adapted to fulfil its object.

The method adopted and recommended by Murphy is, as will be seen, far more likely to succeed in difficult cases. This operator places his patient in a sitting position before him, having previously removed all clothing from the part to be examined or its neighbourhood. The patient bends well forward, resting his hands upon his knees. Whilst so sitting he is instructed to breathe deeply. The examiner sitting behind places his hand, with the palm flatly against the patient's abdomen, immediately below the ribs on the right side. Each deep inspiration is succeeded by a correspondingly deep expiration, during which the abdominal walls sink inwards, closely followed by the examiner's hand. As this hand sinks more and more deeply beneath the liver it turns necessarily upon its own axis, so that whereas at first it was placed vertically, or nearly so, it afterwards comes to lie more and more horizontally beneath the liver, pressing upwards against its under surface. This is not done with any idea of actually feeling the affected tissues, though should there be any enlargement I do not know of any method by means of which that can be more clearly defined. Long before the examiner's hand sinks deeply enough to be able to palpate a contracted and shrivelled gall-bladder it exercises sufficient pressure to elicit tenderness, the tissues so examined being pressed upwards against the resistant liver instead of backwards against the yielding duodenum or omentum. Murphy claims that when this pressure comes to bear upon the affected structures the respiration is suddenly stopped. I cannot say that I have always noticed this, but there is no doubt that tenderness is far more quickly and surely produced by this than by any other manœuvre. For this reason I have always practised it with both hands, pressing with the right hand below the right ribs, with the left below those on the left, using the latter as, so to speak, a control experiment. The patient feels the pressure on both sides, but is cognisant, and often keenly so, of the difference between the two. It will be noticed that pressure so applied does not affect the kidney. Renal calculi do not respond as they might, and often do, to direct pressure backwards. Nor does such pressure elicit tenderness if adhesions, which often cause pain and jaundice by their contraction upon these canals, are alone present. And it is obvious that if these inflamed cavities contain a stone, the pressure of such a hard resistant substance between two inflamed walls will excite far more tenderness than would the mere pressure of two soft inflamed surfaces against one another with no such foreign body intervening. After frequent trials of this method I am bound to say that its practical value has appeared to me to be extremely great and that in it we possess a test by the use of which we are often enabled to speak much more positively than we could without it.

When once a clear diagnosis has been made the question of treatment naturally arises. As a surgeon, I am not competent to speak as to the results of medical measures, to which sufferers from calculi of this kind invariably and very naturally first appeal, but the following case is somewhat suggestive.

CASE 49. *Case in which visits to Harrogate for eczema apparently excited the pain.*—The patient, a married woman, aged 50 years, was sent by Dr. Paton of Harpurhey on March 3rd, 1904. She had been married 29 years, had had six children, and no miscarriages. The youngest child was 16 years old. The youngest child alone was not suckled because the mammary secretion ceased nine days before the confinement. This was the date of her first attack. Spasmodic pain and vomiting came on, lasted for 13 hours, and was stopped at last by morphine. For 17 days she was fed by nutrient enemata and no action of the bowels occurred during that time. The first stool passed was "as white as lard." As far as she knew this was the only stool ever passed of that colour. Urination was regular and easy during the 17 days' obstruction. She did not notice the colour of the urine. For the last six years she had suffered from eczema. She went to Harrogate in November, 1898, for treatment. After drinking the sulphur water for about 14 days a second severe attack occurred. Severe pain came on in the epigastrium about one inch below the xiphoid in the median line; this was followed by vomiting and both were relieved by cinnamon and brandy. Again she returned to the water and three days later another, but not severe, attack come on. She had four or five attacks during the month she remained there. 14 days before Christmas she returned home. On Christmas Day she had a severe attack, lasting for three hours, during which time vomiting was incessant. Two years later she again went to Harrogate. After three days' drinking of the same water another attack appeared, lasting three hours. In April, 1899, another severe attack occurred, during which vomiting was incessant for a week. She was more or less ill for a month. Since that time she had had but slight attacks until a month previously to my seeing her, when she had a worse attack than usual. The vomiting and pain were so intense, excessive, and persistent that Dr. Paton feared lest peritonitis had begun. During all these attacks there had never been any marked jaundice. The urine had always been high coloured and scanty. There had been sacral pain on both sides and she had had a "weak back" all her life, even before marriage. She had been treated by one or two other medical men for "ulcerated" womb. She had never had typhoid fever or dysentery and had never been out of this country. Her mother had died at the age of 62 years from similar attacks but associated with diarrhœa. She "wasted away." She was always yellowish-brown in colour. On examination the abdomen was very fat and somewhat yellow in colour. The liver was not enlarged and no tumour could be felt. There was great tenderness along the upper half of Robson's line, increasing

as the costal arch was approached. There were tender points on pressure over all the posterior branches of the intercostal nerves. The main point of which she complained without pressure as tender was at the end of the tenth costal cartilage on the *left* side. Nothing could be felt at that point. The pain had always commenced in the epigastrium and passed round the right side to the angle of the scapula. The tenderness and soreness following had been felt all over the upper abdomen. Murphy's test gave a well-marked affirmative result. Operation was performed on March 7th, Mayo Robson's incision being adopted. The omentum was adherent to the anterior parietal peritoneum. The gall-bladder was opened and 18 small faceted stones were removed by the scoop, aided by pressure from without. The cystic duct was dilated almost to the calibre of the gall-bladder. The common and hepatic ducts were explored without result. A rubber tube was sewn in in the usual manner. The abdominal wall was closed around by figure-of-8 silver sutures. A small drainage-tube was left in the subcutaneous fatty layer. Bile escaped freely through the tube until the ninth day when the tube became loose. Bile continued to stain the dressings until the fifteenth day, and three days later the patient went home. Dr. Paton removed the wire sutures at the end of six weeks and reported her well and free from pain a year later. This patient was shown at the Medical Society of Manchester on Nov. 2nd, 1905, in perfect health.

But considering the risks to which a patient in whom the presence of these concretions is coincident with inflammation of the channels containing them is necessarily exposed and the further danger of the morphine habit which many of such patients acquire, since no other drug appears to be capable of controlling the pain: considering also the low mortality which attaches to modern operations for removal of these calculi and the advisability of the treatment by drainage which can then be instituted for the removal of the inflammation, I think that we are justified in advising operation with the same insistence with which it is now advised in cases of appendicitis, with which condition it has many points in common. My own experience is limited to 66 cases, with four deaths, a mortality of slightly over 6 per cent., but it must be noted that two of these occurred before 1898 and were therefore operated upon by the faulty older methods. Of the other two, one died from persistent hæmorrhage; this case also was operated upon in 1897, when the use of chloride of calcium and adrenalin were, if known, not sufficiently appreciated, and the only case during the last five years occurred in a lady, aged 75 years, whose frame had been still further enfeebled by an arduous life and who never sufficiently rallied from the shock of the operation. Such an analysis appears to justify one in regarding the operations of cholecystotomy and choledochotomy as at present carried out as eminently safe operations.

Cholecystectomy is an operation which should, I think, be restricted to cases of gangrene of the gall-bladder or to those isolated and unusual cases where, for some very cogent reason, the removal of a useless and dangerous organ is indicated. It should never be the operation of election. When it is remembered that the removal of the calculi is only an incident in the cure of acute cholecystitis or choledochitis the relative importance of drainage of these canals will naturally take the first rank in the treatment. Now drainage is much more easily, safely, and quickly carried out if the tube is fixed in the gall-bladder than if it has to be placed in the opened cystic or common duct. Such a proceeding may be unavoidable but I can hardly conceive of its being deliberately preferred. Most of those who advocate cholecystectomy appear to at once close the opening into the ducts and press its claims on the ground that the abdominal wound can immediately be closed and the occurrence of a biliary fistula be thus prevented. Such an argument might have been of force in the older days when the technique of these operations rendered such a fistula probable or, at least, possible. It has lost all the force it ever possessed in view of the improved methods at present in use. And the very argument itself goes to show that those who use it have lost sight of the primary indication in these cases—the removal of the inflamed condition of the biliary channels and of the infective material within them.

Two methods of incision in order to reach these parts hold the field at the present time. A vertical one through the outer fibres of the right rectus, prolonged upwards or downwards or with an inclination inwards above or outwards below if required (Mayo Robson's), and an oblique one carried longitudinally outwards below the right ribs from the outer edge of the rectus backwards, following the direction, and thereby avoiding any division of, the lower intercostal nerves (Rutherford Morison's). Both have their advocates; both, I think, have their special indications. As I have had the pleasure and advantage of seeing these two distinguished surgeons operate, each by his own method, on cases of this kind I have followed both methods in different cases, and I will conclude this paper with details of two operations of my own, in one of which I followed the Mayo Robson and in the other the Morison method. Both were equally successful; both were, I think, typically suitable for the particular method employed. Before these, however, and by way of contrast, I append a case treated by the older method, in which its difficulties and drawbacks will be seen. In the old it was, above all things, thought necessary to preserve adhesions and to form fresh ones around the gall-bladder before opening that reservoir for fear of the contact of infective bile with the peritoneum around. The principle of the newer methods is precisely the reverse. Before any attempt at removal all adhesions must first be liberated; the entire biliary tract must be open to inspection and palpation; then by packing around the parts which require incision an equal security against soiling the peritoneum may be obtained, whilst the gall-bladder or ducts are never sutured to any part of the abdominal wall but left perfectly free to move in any direction.

CASE 12. *Illustrates the old method, leaving a gall-stone in the common duct and therefore requiring a second operation to remove it; mass felt not gall-bladder.*—On Dec. 1st, 1896, a woman, aged 37 years, was admitted to the Ancoats Hospital. She was a short, worn-looking person with a greenish-yellow skin. For six months she had suffered from attacks of colic followed by jaundice, clay-coloured stools, and bile-stained urine. There was very marked loss of flesh. Since the first attack the pain had recurred frequently. It was felt at the typical point, followed the usual course around the side to the point in the back below the angle of the scapula, and was of the typical character. The abdomen was flaccid; below the ribs on the right side was a firm, slightly prominent, mass in the region of the gall-bladder. The liver was somewhat enlarged, the edge being plainly felt about one inch below the ribs. No nodules could be felt in this organ and its edge was smooth and rounded. Murphy's test was not then known. On Dec. 4th the abdomen was opened vertically in the right Langenbuch's line. The omentum was first seen and was adherent to the gall-bladder, which was contracted and small. The mass of omentum which formed the tumour previously felt was ligatured and removed, the bladder being with great difficulty sutured to the visceral peritoneum, its tip protruding. One angular stone could be felt in the common duct. Two days later the gall-bladder was opened and two large stones were removed by Tait's forceps. The probe passed down for six inches without meeting with any obstruction. A drain-tube was fixed in the gall-bladder. A little cheesy material tinged with bile escaped. There was no mucus. Bile appeared the next day and from that time flowed freely but there were still attacks of colicky pain from time to time showing that the obstruction was not perfectly removed. The patient left the hospital on Jan. 4th, 1897, with a small sinus but bile had by this time ceased to escape by the wound. On Feb. 20th, 1897, she returned. She was then jaundiced but the wound had perfectly healed. On the 23rd a fresh incision was made internal to the last and parallel to the old scar. The transverse colon was adherent to the parietal peritoneum and to the shrivelled gall-bladder. Tracing the latter downwards, after separating adhesions, a stone was found in the common duct near its lower third. The duct was incised and the stone, of the size of a small marble, was removed. There was free escape of bile and mucus which was caught upon sponges packed around. A glass drainage-tube surrounded by gauze was placed in contact with the opening in the duct which was not sutured and to the end of this a rubber tube was attached. The tube was removed three days later but the gauze was adherent and the last portion only came away on the seventh day. The patient was discharged well on March 26th; the jaundice had quite disappeared. There was no bile in the urine but plenty in the fæces. The difficulty of approximating the gall-bladder, shrunken as it was, to the abdominal wall was very great. It was a great relief when this was shown to be no longer necessary.

In the following case, which was operated upon during

pregnancy at the patient's earnest request, there were at least four months of considerable and increasing strain to be borne by the abdominal wall, should the pregnancy not be interrupted. As it is thought by many that division of the muscular branches of the intercostal nerves, unavoidable in the vertical operation, conduces to sequent ventral hernia, it was thought wisest to adopt Morison's incision, which avoids these nerves. The result was all that could have been desired. The calculi were removed; the pregnancy was not interrupted; at term she was delivered of a fine boy without any difficulty, and Mr. H. J. Moon was able to write 16 months afterwards: "As a further proof of her fitness I might mention that on Thursday last she attended a confinement with me and has on several occasions nursed maternity cases for me."

CASE 53. *Operation during pregnancy, which was not interrupted, by Morison's method.*—The patient, a married woman, aged 33 years, was sent by Mr. Moon of Levenshulme, on June 3rd, 1904. She had had five children with no miscarriages; the youngest child was five years old. At the time of examination she was four and a half months pregnant. For the last two years, up to which time she had always enjoyed good health, she had suffered from attacks of pain, starting beneath the right scapula and passing round to the epigastrium. These had been much worse for the last five months and were increasing in severity and frequency. The pain was ushered in by some vomiting of food, in which lately she had noticed streaks of blood. Each attack was followed by transient jaundice, which disappeared within two days. One calculus had already been found in the fæces. The bowels were regular and she had not noted any marked change in the colour of the stools. The urine was always high coloured after the pain. All her confinements had been severe, requiring chloroform. She dreaded intensely the possible combination of one of these attacks with the expected labour. There had been no loss of flesh. Both Robson's and Murphy's tests gave a positive result. She was admitted to Ancoats Hospital on June 8th. On the 12th and 13th there were severe pain and vomiting. On the 16th operation was performed. Morison's lateral incision was used. The gall-bladder was distended and contained a great number of small round calculi like fig seeds. All were removed and a tube was tied in, secured by catgut purse-string and fixation suture. The rest of the wound was closed by tier suture. The drain tube came away on the 25th (the ninth day). Bile continued to flow until July 1st (the fourteenth day), and on July 7th she was discharged well; her pregnancy was uninterrupted. She was safely delivered of a fine boy at the normal period. The abdominal wound had perfectly healed.

The last case illustrates the Mayo Robson method of incision. This was chosen because it seemed probable that liver rotation as he advises might be carried out with advantage and this can be done better, so far as I can judge, through the vertical than through the horizontal incision; this, indeed, proved to be the case. The final results do not seem to differ very much but there is one condition in which the Morison incision has decided advantages. This is in any case in which pericystic suppuration is suspected. The pus runs easily out of the abdomen when once the adhesions around are separated and does not tend in any way to infect the essentially dangerous region—that of the small intestine. A few weeks ago I operated upon a woman in this way whose gall-bladder contained an ulcer through which a stone had passed and an abscess had formed around it. When the adhesion which existed between the duodenum and the liver was separated about an ounce of foul pus escaped. It ran easily out and on to the sponges previously placed. No peritonitis followed and the patient perfectly recovered. In all such cases Morison's incision offers immense advantages. In ordinary cases, however, I rather prefer Mayo Robson's. The following is an example of his method and the last case I propose to detail

CASE 55. *Case illustrating the later methods of operation; curious abnormality of arms; Mayo Robson's method; value of Murphy's test.*—The patient, a man, aged 50 years, was sent by Dr. W. Buck of Beswick in October, 1905. In 1898 he first noticed pain in the right hypochondrium. This attack lasted for two days. In this and some of the succeeding earlier attacks there was no vomiting but slight jaundice; indeed, although he had had six or seven attacks vomiting was only noticed once. The pain, which was paroxysmal, was always present. Beginning in front, it rapidly passed through to the back and up to both shoulders. Tingling and numbness followed in both arms and both hands. In the back it was felt below both shoulder-blades. There had been no loss of flesh. The fæces always lost colour, though the amount of loss varied in different attacks, and the urine had been high coloured. The health had been perfectly good between the attacks. He had consulted several physicians whose diagnosis had greatly varied. Dr. Buck, however, always believed that biliary calculi were the cause. The patient had a curious condition of the left arm which was congenital. Pronation of the forearm was impossible. The range of movement from supination, which was complete, was only 90°, or a right angle midway between the two. This abnormality occurred in every other child of his father. In his eldest brother it was double; neither arm could be completely pronated. The liver edge was not thickened or nodular; it projected two inches below that of the ribs. No enlargement of the gall-bladder could be felt but there was some increased resistance over the upper half of the right rectus. There was no pain on direct pressure downwards (Robson's point). Murphy's test gave a positive result. On Oct. 6th, with Mayo Robson's incision, the abdomen was opened and the gall-bladder was isolated and packed around with sponges. The gall-bladder was opened and bile escaped; 30 faceted stones were removed mainly by the scoop aided by pressure from without. One stone in the common duct was in this way coaxed up into the gall-bladder and removed. When all was clear a rubber drainage-tube was tied in by a catgut purse string suture and a catgut fixation suture and gauze were placed around it. The abdominal wall was then closed, also with catgut in tiers. Bile passed freely through the tube, which came away on the thirteenth day. On the fifteenth the gauze was also loosened and removed, but threads of this continued to be extruded until the twenty-fifth day. The patient made a steady and pretty rapid recovery. Bile stained the dressings until the twenty-fifth day. For the first week he complained of slight stinging pains in the affected region but these soon disappeared and did not recur.

The cases that I have detailed will, I think, not only illustrate many of the difficulties of diagnosis encountered in actual practice and the means which at the present time are most useful in differentiation, but also many of the improvements in the technique of operation which have so largely increased the safety with which such operations can now be carried out.

Manchester.

A CASE OF POST-TRAUMATIC HÆMORRHAGE FROM THE SUPERIOR LONGITUDINAL SINUS WITHOUT FRACTURE OF THE SKULL; OPERATION AND RECOVERY.[1]

BY E. FARQUHAR BUZZARD, M.D. OXON., M.R.C.P. LOND.,

ASSISTANT PHYSICIAN TO THE ROYAL FREE HOSPITAL, THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, AND THE BELGRAVE HOSPITAL FOR CHILDREN;

AND

JOSEPH CUNNING, M.B., B.S. MELB., F.R.C.S. ENG.,

ASSISTANT SURGEON TO THE ROYAL FREE HOSPITAL AND THE VICTORIA HOSPITAL FOR CHILDREN.

ON April 1st, 1905, a young man, 25 years of age, slipped and fell on the back of his head, inflicting a small scalp wound which was dressed a few days later in the casualty room of the Royal Free Hospital. On the 14th he came to the hospital again, complaining of constant and increasing headache since the accident, and was seen as a medical out-patient. The scalp wound was clean and perfectly healed and palpation of the skull revealed no lump, depression, or other abnormality. The headache was general, not limited to one side or any particular locality, and was not associated with any cranial tenderness. Examination of the function of the cranial nerves failed to show any alteration from the normal; the pupils were equal and active;

[1] A paper read before the Clinical Society of London on March 9th, 1906.

there was no ocular palsy, nystagmus, hemianopsia, or optic neuritis. The power in all the limbs was unimpaired and coördination was well preserved. No disorder of sensation could be elicited anywhere on testing. It was noted, however, that the abdominal reflex on the left side was absent, that the left knee-jerk was more brisk than the right, and that an extensor response was obtained on stimulating the sole of the left foot. A tentative diagnosis of intracranial abscess was made and the patient was recommended for admission into the hospital. He did not come into the hospital until two days later and in the meanwhile he had experienced several attacks of vomiting and had noticed some paresis of the left hand and the left leg.

On admission his state had altered considerably. He was rather drowsy but could be roused; his breath was offensive and his tongue was furred; his pulse varied between 60 and 70 and his temperature was generally subnormal. The headache was very intense, radiating from the back of the head and spreading over the vertex, more especially on the right side. Vomiting of the cerebral type took place at intervals. The urine was alkaline and gave a heavy deposit of phosphates but contained no albumin. There was now distinct hemiplegia involving the lower half of the left side of the face, the left arm, and the left leg. Sensation was impaired over the left forearm and fingers and over the lower part of the left leg. An exaggerated knee-jerk, ankle clonus, and extensor plantar response were obtained on the left side and the left abdominal reflex could not be elicited. There was no optic neuritis. On the 18th the patient was much more drowsy and examination revealed left hemiplegia, hemianæsthesia, and hemianopsia. Still there was no optic neuritis.

An exploratory operation was decided upon and was undertaken at 6.30 P.M. After the scalp had been shaved and cleansed the upper end of the fissure of Rolando was marked by a small nick in the skin at a point half an inch behind the centre of a line joining the glabella with the external occipital protuberance. A large flap of scalp was turned down and the greater part of the bone covering the parietal lobe was exposed. A trephine opening one inch in diameter was made at a spot about one and a half inches below the mid-line and an inch behind the fissure of Rolando and this opening was enlarged with Hoffmann's forceps. The skull was at least a third of an inch in thickness and was very tough. The bulging dura mater was of a dark purplish colour which was found by incision to be due to a large mass of blood clot lying on its internal surface. A considerable part of this clot was brownish in hue and gave evidence of having been present for at any rate some days. With the possibility of the source of the hæmorrhage being the middle meningeal artery in view, the opening in the skull was enlarged in a downward and forward direction but during a pause in this undertaking the clot was removed from beneath the dura mater with a finger. Contrary to expectation, the fresh hæmorrhage which ensued came from the direction of the superior longitudinal fissure. The skull opening was accordingly enlarged upwards until the superior longitudinal sinus was exposed and found to be bleeding freely into the subdural cavity. The dura mater having been split up to the bleeding point four pairs of Spencer Wells forceps were applied and gauze was packed round them. The latter manipulations were necessarily hurried owing to the condition of the patient's pulse which had become increasingly rapid and feeble with the severe and continuous hæmorrhage. For the same reason no exact view could be obtained of the bleeding point, hence the necessity for several forceps and for leaving them *in situ*. While the dura mater and the scalp were being stitched an assistant infused three pints of warm saline solution containing a drachm of brandy into the right median basilic vein. On the following morning the patient was conscious but he complained of considerable pain. The hemiplegia, hemianæsthesia, and hemianopsia were still marked and conjugate deviation of the eyes to the left was impaired. The pulse was 88 and the temperature between 99° and 100° F.

On the 20th the forceps and plugging were removed without any recurrence of hæmorrhage. No improvement had taken place in the condition of the left limbs and it was noticed that the patient had complete loss of sense of position of them. On the 22nd improvement in the hemiplegic and hemianæsthetic condition was noted and this steadily progressed. 14 days after the operation the patient was allowed to get up and a fortnight later he was sent to a convalescent home still exhibiting slight weakness and clumsiness in the left arm and hand. Since that time all has gone well and his recovery has been complete.

The case is one of considerable interest for several reasons. 1. The occurrence of hæmorrhage from the superior longitudinal sinus without fracture of the skull may be attributed to the tearing away of a tributary vein from its junction with the sinus at the time of the accident. The unusual thickness of the skull was probably a causative factor by reason of its deficient elasticity. 2. The slow development of the symptoms may be explained by the fact that the hæmorrhage was a venous one, taking place from a small point and against the normal intracranial pressure until the skull was opened at the time of operation, when the bleeding rapidly assumed alarming proportions. 3. The long period, four days, which elapsed between the operation and the improvement in the hemiplegic state was probably due partly to the interference in the functions of the cortex caused by the preceding compression and partly to an extensive œdema of the brain substance, resulting from the relief of pressure and from the extremely anæmic condition of the patient. 4. The diagnosis of cerebral abscess was one which appeared to be best justified and one which would probably be made in any similar case in spite of the fact that optic neuritis was not present. A gradually progressive hemiplegia associated with hemianæsthesia and hemianopsia and unaccompanied by anything in the nature of convulsions pointed strongly to the presence of a deep abscess exerting pressure upon the optic radiations and internal capsule. The absence of convulsions must be attributed to the very slow accumulation of blood upon the surface of the brain in contrast to the more rapid hæmorrhage which obtains in cases of arterial rupture. 5. Lastly, the importance of a careful examination of the nervous system in a patient complaining of nothing but a headache following a slight injury to the head and the absolute reliance which can be placed upon the discovery of an extensor plantar response and of the absence of the abdominal reflex on one side as evidence of an organic lesion, are well emphasised in the history of this patient.

Although we have searched the medical and surgical literature of the subject we have been unsuccessful in tracing any similar case of hæmorrhage from the superior longitudinal sinus without fracture of the skull.

NOTES OF A

FATAL CASE OF SEPTIC THROMBOSIS OF THE LATERAL SINUS, SECONDARY TO CHRONIC OTITIS MEDIA PURULENTA IN THE LEFT EAR, AND COMPLICATED WITH SEPTIC INFARCTIONS IN THE RIGHT LUNG.

BY J. STODDART BARR, M.B., CH.B. GLASG.,

ASSISTANT SURGEON TO THE GLASGOW HOSPITAL FOR DISEASES OF THE EAR, NOSE, AND THROAT; ASSISTANT TO THE LECTURER ON DISEASES OF THE EAR, UNIVERSITY OF GLASGOW.

THE patient, a little girl, aged seven years, was admitted to the Glasgow Ear, Nose, and Throat Hospital on Sept. 20th, 1905. She had had a continuous discharge from the left ear for a year, which seemed to have originated in an attack of whooping-cough. 15 days before admission she complained for one day of a pain in her left ear. Four days afterwards (11 days before admission) she had a severe rigor lasting about half an hour. This was followed by a similar rigor on the following day, and, up to her admission, she had a dozen severe rigors, two of them occurring on the morning of the day of admission. According to the report of the family medical attendant her temperature during four or five days prior to admission had varied from normal to 104° F., while for two days there had been frontal headache and a week before admission she complained of pain in the left side of the neck. At the beginning of the acute illness she vomited once or twice but not since. She had been rapidly emaciating, with profuse perspiration, and for two or three days there had been a troublesome cough. There was no history of convulsions

unconsciousness, twitchings, or paralysis, neither had there been diarrhœa.

On admission the patient was found to be thin and pale, with clammy sweat on the brow. The temperature was 99·8° F., rising four hours afterwards to 104°, the pulse numbering 138. The breathing was slightly accelerated and there was frequent cough but no expectoration. There was no complaint of pain in the chest. Owing to the left meatus being occupied by granulation tissue no view of the tympanum could be obtained, but the discharge was seen to be profuse and fœtid. The mastoid surface was red and tender, owing to a blister having been applied at home. On this side there was evident tenderness in the neck behind the angle of the jaw; but no swelling or pain on pressure over the internal jugular or engorgement of the superficial veins was seen. On the day after admission Dr W. E. F. Thomson examined the eyes and reported as follows: "Examined with undilated pupils. Pupils react smartly to light and on accommodation. Ophthalmoscopically, both optic nerves are somewhat swollen, filled in, and hyperæmic, with blurred edges; veins slightly tortuous; no hæmorrhages observed. The condition represents the onset of optic neuritis." After the rise of temperature to 104° on the evening of her admission it fell during the night and in the morning was 99°, with the pulse at 97. By mid-day, however, it had risen to 102·8°, with a pulse at 112, but no fresh rigors had occurred. The lungs were examined and a few moist râles were heard below, and to the inner side of, the inferior angle of the right scapula, and about two inches above this tubular breathing was heard over a restricted area.

After considering the history and the symptoms, especially the repeated and severe rigors, it was resolved to operate without further delay. The evidence found of pulmonary involvement, while adding much to the gravity of the case and greatly diminishing the chance of recovery, did not, in my opinion, debar operation. I first performed what is usually termed the radical mastoid operation, which includes the thorough removal of the outer wall of the antrum, of the postero-superior wall of the osseous meatus, and of the outer wall of the attic of the tympanum, converting meatus, tympanum, and antrum into one cavity. The antrum was found to be full of pus and granulation tissue; the aditus, or passage between the antrum and the tympanum, and the tympanum itself, were in a similar condition. The walls of the exposed cavities were thoroughly curetted and a guiding track was searched for and found leading backwards. In order to expose the sigmoid part of the lateral sinus I made an incision in the soft parts backwards from the mastoid wound, exposing the bone for fully two inches. By means of chiselling, the track, which consisted of diseased bone and pus, was followed as far as the groove for the sigmoid sinus, and on extensively uncovering the sinus and the neighbouring dura mater widespread disease was disclosed. The sinus itself was found to be partially open and converted into a yellowish sloughy-looking mass surrounded and partly filled with fluid pus and no longer a channel for blood. It was followed backwards and slit open until a gush of blood appeared about one and a half inches from the "torcular." The bleeding was quickly staunched by packing with strips of iodoform gauze. The lower part of the sigmoid sinus was followed towards the bulb and it contained solid thrombus which was removed as far as possible. It was thought advisable also to expose the dura mater over the roof of the middle ear in case of there being an extra-dural abscess in that situation, but nothing was found. Iodoform powder was freely applied to the exposed surfaces and the cavities were filled with iodoform gauze.

After the operation the patient's general condition improved, the temperature falling in the evening to 98·8°, the pulse to 110, with respirations at 30. During the night the temperature remained below 99° but there was rapid breathing. At mid-day, however, the temperature again rose, reaching 103·2°, the pulse being 138 and the respirations 35. From this time there was no improvement, but the opposite, and death took place on the following morning, two and a half days after the patient's admission to the hospital. A post-mortem examination was kindly carried out by Dr. James Walker, whose report is appended. From Dr. Walker's report it will be seen that, in addition to the sinus involvement, there were two well-marked septic infarctions in the right lung, which probably explained the rapidly fatal termination of the case. There is reason to believe that this pulmonary complication had begun several days before the patient's admission.

Remarks.—With regard to the significance of rigors, it is highly probable that had operative treatment been applied in this case a few days earlier, before the pulmonary infection had supervened, a different result might reasonably have been expected. It should be emphasised that when rigors with violent oscillations of temperature appear in connexion with a purulent middle-ear disease *operative treatment is urgently called for.* I am afraid, judging from this case and other cases of a similar kind, that the grave significance of this symptom in these ear cases is not yet duly recognised by some practitioners. In these cases of septic sinus thrombosis operation carried out early is probably more successful than in any other form of intracranial complications due to ear disease, hence the vital importance of early recognition of the condition present. As to ligature of the internal jugular it may be asked, Why was the internal jugular vein not ligatured in this case? There is no doubt a gathering opinion among authorities in favour of ligaturing this vein, either as the first stage of the operative treatment or following the operation upon the lateral sinus; and quite recently, since this case occurred, I have in a similar one ligatured the internal jugular within 48 hours after an extensive operation upon the lateral sinus and mastoid cavities with so far promising results. In the case before us, after consultation with Dr. T. Barr, the senior surgeon, it was considered expedient first to clear out the mastoid disease and to deal with the sinus, keeping in view the future ligaturing of the internal jugular. The pulmonary complication, however, bringing about the rapid death of the patient, did not admit of sufficient time to act, even had it been considered advisable.

Report of post-mortem examination by Dr. JAMES WALKER, *pathologist to the Glasgow Hospital for Diseases of the Ear, Nose, and Throat.*—The subject was a well-developed child in a fair state of nutrition. There was a large operation wound on the left side of the head. The meninges were practically normal; in particular there was no meningitis. The brain was very œdematous but otherwise appeared free from disease. There was a firm, apparently aseptic, mixed thrombus in the left lateral sinus, extending back to the "torcular." The bulb of the sigmoid sinus was filled with a clot which showed septic softening at parts. The knee of this sinus had been opened and packed. The other sinuses proved to be healthy. The left jugular vein was examined but it showed no thrombosis or ulceration even so high as the level of the foramen. At this part, however, it was surrounded by numerous small, acutely inflamed lymphatic glands. Both lungs were the seat of marked hypostatic congestion. Over the upper part of the posterior surface of the lower lobe of the right lung was found an area as large as a penny of acute fibrinous pleurisy. This overlay a wedge-shaped septic infarction which was broken down in its centre and measured one inch in its greatest diameter. A second and smaller one was found lower down in the same lobe. The lung for two inches around was consolidated. The heart was free from endocarditis and there was no sign of peripheral thrombosis. A part of the lung showing the two infarctions was preserved as a naked-eye specimen and shown to the Glasgow Pathological and Clinical Society. In addition sections were prepared. Under the microscope these show the evidences both of infarction and septic infection, while round the infarction proper the lung shows many small patches of acute broncho-pneumonia. Material from the diseased lateral sinus gave feeble growths of pneumococci and streptococci. These bacteria were also cultivated from the abscesses in the lung. The slide prepared by Gram's method shows large masses of microbes, chiefly diplo- and strepto-cocci. A large bacillus is a marked feature of parts of the section. I am unable to tell its nature as it did not grow on the culture media, or give the staining reactions of the acid-fast group of organisms.

Dr. W. E. Thomas of Ystrad, Glamorganshire, has been returned unopposed for the Rhondda urban council.

PRESENTATION TO A MEDICAL PRACTITIONER.—Mr. W. R. Spencer Watkins, M.B., Ch.B. Edin., was entertained at dinner at Penygraig, Glamorganshire, on March 9th, to celebrate the occasion of his leaving Penygraig to take up the appointment of house surgeon to the Cardiff Infirmary. Mr. Creed, colliery agent, presided and on behalf of the subscribers presented Dr. Watkins with an illuminated address and a wallet of banknotes.

TWO CASES OF ARRESTED DEVELOPMENT OF THE RECTUM.

BY H. SYDNEY FORSDIKE, M.B. LOND., M.R.C.S. ENG., L.R.C.P. LOND.

THE two following cases deserve to be recorded, as they form such a sharp contrast both as regards the arrest of development and also in the operative procedure necessary for the treatment thereof.

The first patient was a full-term male child, apparently well developed and strong. On the third day the nurse reported that the child's bowels had not been opened since birth, that he was sick after suckling and appeared to be in great pain. Examination of the abdomen showed that it was greatly distended, tympanitic to percussion, and resistant to the hand. The perineum was normal with a well-developed anus. On introducing the finger through the sphincter I found that it ended in a cul-de-sac about one inch above the anus, and as the child was crying and straining the bowel was felt bulging downwards with each effort. Chloroform was administered and the sphincter was stretched with the finger and then by means of a speculum the roof of the cul-de-sac was seen to be formed of a semi translucent membrane. An incision into the membrane at once allowed the escape of flatus and meconium. The membrane was now dissected away peripherally, thus establishing the continuity of the bowel and proctodæum. Subsequently the child did well, a laxative being required for a few days to regulate the bowels.

The second patient was an eight months male child, small, but otherwise apparently normal. On the morning of the third day the nurse reported that the child's bowels had not been well opened and that he was sick and in pain. On examination the abdomen was found to be distended and tympanitic and the skin was somewhat jaundiced. In the perineum in the usual situation of the anus the skin was puckered and drawn together as though around an aperture in the ordinary way. On stretching it, however, the depression was seen to be lined with normal skin but there was no opening. No bulging of the bowel could be felt in the perineum. Since there was apparently an attempt at the formation of a proctodæum it was hoped that with a slight incision the bowel would be found within easy reach. Chloroform being administered, an incision one inch in length was made through the slightly marked anus, being deepened upwards and backwards towards the left sacro-iliac hollow for about one and a half inches. The forefinger being introduced into the wound with considerable difficulty, owing to the proximity of the tubera ischii and the consequent narrowing of the perineum, no bowel could be felt, although the child was allowed to strain under light anæsthesia. The wound was now prolonged backwards to the tip of the coccyx and upwards to the sacro-iliac junction but no bowel could be felt; in its place, however, running upwards towards the left iliac fossa, there was a thickened band of tissue, almost a fibrous cord, which I took to be the undifferentiated rectum. The uselessness of proceeding further by this route was now obvious, as it would have been impossible to bring the bowel down to the surface of the skin and the alternative of excising the coccyx and the lower piece of the sacrum was too severe an operation for such a feeble infant. It was decided to perform colotomy as the only other resource; accordingly the bowel was opened in the left groin on Littré's plan with a double row of sutures between the bowel and peritoneum. I felt quite safe about incising the bowel at once, when some flatus and meconium escaped. A probe was passed into the peripheral part of the bowel which was found to end as a blind sac in the left iliac fossa. The child passed a comfortable night and when dressed in the morning a quantity of meconium had been evacuated and the abdomen was nearly normal. The jaundice passed off in 48 hours but the bowels had to be regulated with a little castor oil. The wounds healed by first intention and the child lived for eight weeks. No post-mortem examination was made.

Text-books speak of dissecting on until the bowel is found, omitting to mention the most frequent difficulty—namely, the lack of space. In my second case the perineum was so narrow that the tubera ischii barely admitted the forefinger into the wound. Moreover, if the rectum is only represented by a band of tissue and the bowel terminates in the iliac fossa as above what chance is there of bringing the bowel down to the perineum? The alternative is excision of the coccyx and lower part of the sacrum in order to carry the bowel backwards, an operation which is too severe for an infant and does not present any advantage over a colotomy. The choice of operation for colotomy between the lumbar and inguinal routes barely needs discussion, the latter presenting obvious advantages. A difficulty frequently found in the after-treatment is an obstinate constipation which is due in some cases either to imperfect action of the muscles of the bowel, which, however, passes off with suitable measures, or to deficiency of intestinal juices, which is probably also arrested development. In my first case a few drops of castor oil had to be given for some days after the operation; then, however, the bowels were evacuated naturally. In my second case, in spite of cautious feeding, hard masses formed in the gut, a condition which was only relieved by a laxative continued on alternate days during the child's life.

Cardiff.

THE THERAPEUTIC EFFECTS OF MERCURY IN A CASE OF TUBERCULOUS MENINGITIS; RECOVERY.

BY W. H. WHITCOMBE-BROWN, M.B., B.S. DURH., M.R.C.S. ENG., L.R.C.P. LOND.

THE patient, a child, aged one year, was taken ill on the afternoon of Dec. 27th, 1905, being heavy and drowsy. She was sick in the evening and had a restless night. At 8 A.M. on the 28th she became worse and I was called in to find her collapsed, with a quick pulse, very rapid breathing, and a temperature of 104° F. There was a history of definite illness commencing the previous day but it was stated that she had been fretful for some weeks previously and had been much frightened by crackers on the 25th. On seeing her again about midday there was marked improvement. She was lively and the temperature had fallen to 101°. I was inclined to believe that before my first visit she had had an unobserved convulsion. Towards the evening she became worse, being prostrate, and the temperature was back to 104°. She passed a restless night and vomited. The child was distinctly worse on the 29th, and on consultation with Dr. J. T. C. Nash (the medical officer of health of Southend), whom I asked to see her with me, we apprehended tuberculous meningitis. The temperature was still high, she was lying semi-conscious, and the pupil reflexes were markedly sluggish, and Dr. Nash thought that there was some rigidity of the muscles of the neck. On the following day, the 30th, the condition was much worse, coma was pronounced, and the cephalic cry was evident. There was more vomiting and she was apparently absolutely deaf and blind; there was no pupil reaction whatever. There was no strabismus or retraction of the abdomen. My partner, Mr. S. Bridger, who saw her with me, fully confirmed the diagnosis and considered her condition quite hopeless. Bearing in mind the note by Dr. Nash in THE LANCET of Dec. 23rd, 1905, p. 1837, upon the value of inunction with unguentum hydrargyri, which I found, too, advised in the "Encyclopædia Medica" published by Messrs. William Green and Sons of Edinburgh, I commenced inunction on Dec. 31st, at the same time giving the perchloride of mercury combined with the iodide and bromide of potassium by the mouth. That day the patient was at her worst with a temperature of 104°; she was quite comatose with a periodic shrill cry; she vomited several times and had convulsive seizures with marked movements of the right arm and leg; she was distinctly weaker. On Jan. 1st, 1906, the condition was the same with several periods of marked collapse. This state of things continued until the 4th when the sickness ceased; she began to take food more freely and a distinct though very sluggish pupil reaction was now observed, the temperature gradually fell, and by the 8th (with general improvement) it reached to below 102°. On the 10th the pupils were reacting well, the child evidently saw and heard, though she was still unable to move the limbs freely; she would try to play with toys held near but the movements evidently required great effort and were

made in stages. It was at this time that Dr. L. Cole Baker of Southsea at the request of the family saw the child with me. The condition was one of improvement all round; the temperature dropped to the normal by the 12th and the child gradually gained strength every day. So far as is possible to judge complete recovery of all the functions of the nervous and muscular systems has occurred, it now (at the time of writing) being six weeks since the first serious symptoms were observed. The inunction is being continued, applied at the nape of the neck or between the shoulders, a piece as large as a filbert nut being rubbed in once a day; for the first fortnight this was applied twice a day. The mixture, two and a half minims of perchloride of mercury, one grain of iodide of potassium, and two grains of bromide of potassium, with syrup and water every four hours, is now alternated with the syrup of iodide of iron. The patient is on a full milk diet with beef-tea and cod-liver oil emulsion. Lumbar puncture was impossible as the parents would not consent. As there were difficulties in connexion with obtaining an opsonic curve tuberculin was not tried. There seems, however, little doubt that this was a case of tuberculous meningitis. Three medical men each without previous knowledge of the opinion expressed by the others at once gave the same diagnosis.

Bearing in mind the case above referred to in THE LANCET and the fact mentioned to me by Dr. Nash that he read of a similar case in "Whitla's Dictionary of Treatment," and now my own case, it seems that there are occasional cases of apparently genuine tuberculous meningitis cured by mercury, especially if (as in this case) the inunction is commenced early, is quickly pushed, and the patient's strength as far as possible maintained. Children usually bear mercury well and in this case there have been no apparent ill-effects of any kind. The child is now quite well, is on ordinary diet, and goes out on fine days.

Southend-on-Sea.

SOME CONSIDERATIONS ON THE TREATMENT OF INTERNAL HÆMORRHAGE BY THE USE OF DRUGS.[1]

BY W. E. DIXON, M.A. CANTAB., M.D. LOND.

(*From the Pharmacological Laboratory, Cambridge.*)

So much has been written on the treatment of internal hæmorrhage by the exhibition of drugs and so much misunderstanding has arisen with regard to the pharmacological action of those drugs which are commonly employed in these conditions that I venture to give some short account of their mode of action, especially with reference to the relative effects on different vessels.

When it is possible to apply a drug directly to a bleeding point the hæmorrhage may, as a rule, be stopped with certainty and ease by bodies which either coagulate proteid or which constrict the bleeding vessels. The tannins and ferric chloride may be taken as examples of the first group and these act by blocking up the smaller vessels with the precipitated serum-proteids; as an example of the second group adrenalin, cocaine, or digitalis may be mentioned. This principle of treatment is correct and such drugs may be employed beneficially in hæmorrhage from the stomach, the nose, the uterus, or other parts where the drug actually comes in contact with the bleeding point. But when the drug must be absorbed and pass into the blood before it can reach the seat of hæmorrhage, exactly what happens to the bleeding vessel is not so easy to determine. In the first place it is necessary to know what has become of the drug; has it, for example, undergone any change in the body which renders its action inert? Secondly, supposing the drug to have reached the blood and to have retained its activity as a vaso-constrictor, then it must exert its action on the vessels of the bleeding point, but not more on these vessels than on the other vessels of the body; and supposing the bleeding vessels in question are poorly innervated or poorly supplied with muscle then the effect on the other vessels may entirely overshadow the effect on the bleeding vessels, so that the large increase in blood pressure from the former effect may overcome the constriction of the more feebly innervated vessels.

The various tannins, as is now well known from the work of Stockman and others, are not absorbed as such into the system; not more than about 1 per cent. reaches the blood in the form of gallate of sodium. Now gallate of sodium does not constrict vessels; indeed, any tendency it has on their calibre is always on the side of dilatation, nor does it increase the tendency of the blood to clot, so that the tannins cannot be regarded as drugs of value in the treatment of internal bleeding. The active principle of the suprarenal glands has been described as exerting a decided action in checking internal hæmorrhage, even when administered by the mouth. Once again we know that adrenalin is destroyed in the stomach and that none of the active constituent reaches the blood; at least, there is no evidence of its absorption as shown by vaso-constriction or rise in blood pressure. I have verified these statements both in animals and on man; in the latter 60 minims of 1 in 1000 adrenalin well diluted produced no effect on the blood pressure as recorded by the Hill and Barnard instrument, whilst in animals even larger doses have been given by the mouth without producing vascular changes. Whereas if even one quarter of a minim of a solution of this strength is injected into the circulation of a cat or if two minims are injected into the circulation of a man there is a decided rise in blood pressure, acceleration of the pulse, and the other signs of suprarenal action. Even when adrenalin is injected subcutaneously it still produces no effect on the systemic blood-vessels. I have tried this by injecting under the skin of the forearm ten minims of a 0·1 per cent. solution and simultaneously observing the blood pressure on the opposite arm. The pressure remained quite constant. Similar effects have been observed by Janeway in America, Elliot in Cambridge, and others. The adrenalin produces a local effect and is apparently destroyed locally. So that neither tannin nor adrenalin when administered in the manner described can reach the blood in a form in which it is possible for them to influence the vaso-motor system.

But we have several drugs which will induce vaso-constriction of internal vessels with certainty. Adrenalin administered intravenously will do this and ergot, the digitalis group of drugs, lead, and other substances are effective when administered either by the mouth or subcutaneously. This vaso-constriction does not affect all the vessels in equal degree; some may be intensely constricted, whilst others, from an absence of nerve supply or poor development of the muscle in their walls, may remain almost or entirely unaffected. In considering the condition of the blood-vessels in any organ of the body two factors must be noticed: (1) the general blood pressure; and (2) the tendency to constriction produced by the local action of the drug on the organ. The latter effect can only be obtained by perfusion of the isolated organ with defibrinated blood outside the body, for it is only in this way that the general effect of the drug on the other vessels, resulting in their constriction and so of a general rise of blood pressure, can be avoided. Such experiments invariably show us that the vessels of the splanchnic area become constricted much more intensely than those of the muscles, brain, lungs, &c. So that if one may take a hypothetical case in which a drug is producing constriction of the vessels by acting on their plain muscle fibre it will produce intense constriction of the splanchnic vessels, a somewhat smaller constriction of the vessels supplying the skeletal muscles and a still smaller constriction of the lungs, liver, and brain. Now, this effect in, let us say, the lungs, brain, or liver is of so feeble a character that the tendency to constriction is entirely overcome by the rise in blood-pressure from the more intense splanchnic constriction, so that instead of constricting these vessels dilate and the organ becomes congested. This statement is true for all the drugs in common use which are employed to produce vaso-constriction. The vessels of the intestines and splanchnic area constrict most, then follow the skeletal muscles, kidney, spleen, uterus, &c., and lastly the liver, lungs, brain, and coronary vessels. The lungs and coronary vessels receive no nerve supply to their muscles, whilst that to the cerebral vessels and liver is of the most meagre description, if indeed it exists at all.

We are now in a position to examine in further detail the effect of those drugs which produce vaso-constriction. Adrenalin is the first, and this drug, as already shown, induces a specific action only when it is injected into the

[1] The substance of a paper read before the Cambridge Medical Society in November, 1905.

circulation. It has been clearly shown that adrenalin acts upon the sympathetic nerve-endings in the muscles and therefore it induces vaso-constriction just in proportion to the development of these endings. Thus the constriction of the vessels of the splanchnic area is intense; it is less in those of the limbs, very feeble in the cerebral vessels, and absent in the coronary. Hence supposing a dose of adrenalin is administered intravenously to a man, the blood pressure rises mainly as the result of the constriction of the splanchnic vessels and the blood being squeezed out from these vessels collects in certain organs the vessels of which do not respond to adrenalin—i.e., which are not innervated—especially the lungs, and to a less extent the liver and the brain. Not only are the vessels of the lungs and the brain not constricted but they are in a state of very considerable congestion.

Adrenalin has a very decided action on the heart, again by acting on the sympathetic endings; it beats much more quickly and vigorously and I have often, by continued administrations of small intravenous injections, kept an animal poisoned by toxins alive which, when these injections are stopped, dies immediately from cardiac failure. I mention this fact to draw attention to the powerful cardiac action of adrenalin which might be invaluable in tiding over an emergency and which has not yet received proper therapeutic recognition.

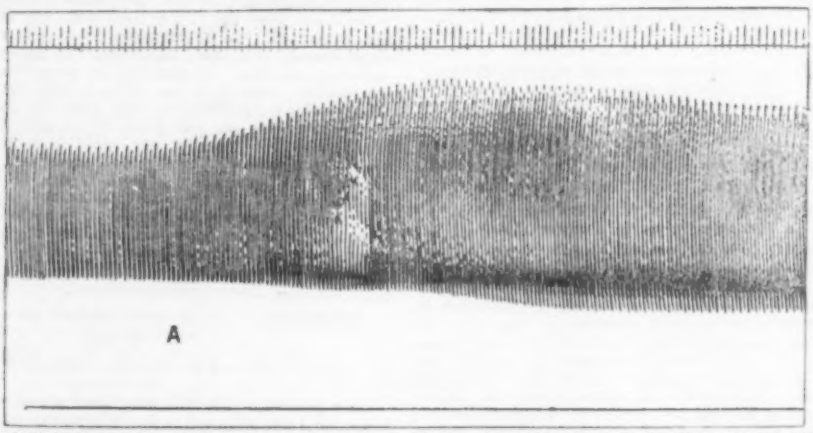
The use of ergot in the treatment of hæmorrhage is also much misunderstood. It produces constriction of the vessels through its action upon certain nerve centres. It does not, like adrenalin, act on peripheral nerve endings; this has been shown by many observers and I have verified their statements by perfusing the drug through peripheral vessels which in all cases tend rather to dilate than to constrict. Ergot, then, acting through the nervous system, produces effects somewhat similar to those produced by intravenous injections of adrenalin. Whilst it gives rise to intense constriction of the splanchnic and limb vessels, it induces congestion of the liver, lungs, and meninges. There is another fact about ergot which has not received adequate attention. I refer to its action on the heart. Under the influence of this drug the vigour of the heart increases and its output is augmented. This action is on the cardiac muscle, since the effect can be produced on the isolated heart. It is quite a different effect from that of digitalis, since there is no slowing of the beat and no action on the vagal mechanism. The effect is quite considerable, more pronounced than that of digitalis, and thoroughly deserves the attention of clinicians (see illustration). The objection to the use of ergot in any form is its present want of uniformity; the greater part of that which is on the market is quite inactive and much has so feeble an effect as to be useless in the treatment of disease. Until it is suitably standardised these objections must continue to hold.

One great difference between the action of adrenalin and that of ergot is that the effect of the former drug is very transient, being oxidised in a minute or two, whilst that of ergot is much more prolonged, the effect lasting several hours after the administration of a single dose. The practical effect of injecting ergot into man is to produce a rise in the systemic blood pressure much greater than that which can be obtained by any of the digitalis group of drugs. This increase of pressure is mainly vaso-motor but is partly cardiac. The vessels which do not constrict are the coronary, cerebral, and pulmonary, so that the lungs and brain being congested any bleeding from them will certainly be augmented. Injections of ergot are legitimate for the purpose of arresting hæmorrhage only when the lesion is in some part of the splanchnic system.

Of the digitalis group of drugs three only require attention—digitalis, strophanthus, and squill. Squill is much the most effective in constricting vessels, then follows digitalis, and, lastly, strophanthus, so that if the use of one of these drugs be desirable for vaso constriction that one should be squill. Now squill produces its action on plain muscle in two ways—first, by exciting the nerve endings, and secondly, the muscles; so that vaso-constriction does not in this case depend upon the presence of vaso motor nerves. But nevertheless the effect of dosing with squill is much the same, as far as the vessels are concerned, as dosing with ergot—that is, the splanchnic vessels constrict and the pulmonary and cerebral dilate passively. The latter vessels are relatively poorly supplied with muscle and when the blood pressure rises the feeble attempt which the drug makes to diminish their calibre is overcome by the augmented blood-pressure. On the coronary vessels the same order holds, as Dr. G. S. Haynes has shown in this laboratory—that is, the squill is most active as a vaso constrictor and strophanthus least. This is particularly interesting because stropthanthus is far and away the most toxic drug to the ordinary musculature of the heart, a good tincture of stropthanthus being eight or nine times as toxic as a good tincture of digitalis, and yet it has comparatively little effect on the muscle of the heart vessels.

There are still other drugs which are occasionally used for their effect on vessels. They are veratrine, barium, and certain of the heavy metals, particularly lead. These drugs act directly on all forms of muscle and produce tonic contraction. Hence they produce considerable and very persistent constriction lasting longer than that produced by a nervous action. But, again, what has already been said about squill applies also to these drugs; it is doubtful if they produce other effect than passive congestion of the liver, lungs, and brain. Their only legitimate use is for intestinal, uterine, or other hæmorrhage from the splanchnic vessels and even here it may be questioned whether their action is desirable.

I have briefly endeavoured to show that the tannins, adrenalin, digitalis and its allies, ergot, veratrine, barium, and lead are all worse than useless for hæmoptysis or hæmorrhage from the brain or the liver. Upon what drugs, then, can the physician rely in these conditions? First, it is of the utmost importance to prevent any stimulation of the heart or vaso-constriction, either of which may be produced very readily reflexly by any mental disturbance. The most efficient



Isolated rabbit's heart perfused with Ringer's solution and recording by the method of Langendorff. At A 0·5 per cent. liquid extract of ergot was added to the perfusing fluid. The heart beats more quickly and much more forcibly. Time = seconds.

prophylactic is to diminish all sensory reflexes by means of morphine. Now morphine has no action on the heart or vessels directly, but by inducing quietness, placidity, and a desire for sleep it prevents sudden movements, excitement, and other effects which induce cardiac acceleration and reflex rise of blood pressure. In this way it will probably do more good than any other drug. There is, however, another type of drug which it is possible to employ advantageously, that is one which augments the clotting power of the blood. Calcium is *par excellence* the drug for that purpose. It should be administered preferably in a dissociable form such as the chloride. If the salts of calcium are taken by the mouth a certain time must elapse before sufficient reaches the blood to produce an effect on its time of clotting. Unfortunately, however, most of the cases of bleeding which one sees are urgent and such that the administration of calcium by the mouth is of little value. In these cases the drug should be given subcutaneously. One or two grains administered in this way will diminish the time of blood-coagulation of a healthy man to about a half. For this purpose the calcium chloride should be neutral and injected deeply into the subcutaneous tissue, so that as far as possible the local irritant action of the drug may be avoided. In these cases of hæmorrhage perfusion with saline is occasionally performed. Dr. C. J. Coleman has lately shown in this laboratory that such dilution of the blood increases the time of clotting sometimes to two or three times that of normal. Perfusion is, however, rarely undertaken until the bleeding has ceased.

Finally, I should like to point out that it is a well-known clinical fact that most cases of internal hæmorrhage such as hæmoptysis stop without assistance. It is not possible to draw correct conclusions as to the action of a drug from its administration in two or three isolated cases of bleeding. The cessation of hæmorrhage after the exhibition of a drug is in itself no proof that the effect was produced by the drug, and I cannot doubt that in many instances where such drugs as ergot have been employed to stop hæmorrhage that their action has been rather to delay the desired effect.

Pharmacological Laboratory, Cambridge.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF MYCOSIS FUNGOIDES SUCCESSFULLY TREATED BY THE X RAYS.

BY G. G. STOPFORD TAYLOR, M.D. DURH.

THE patient, who was a man, aged 47 years, was under my care at the Liverpool Skin Hospital, to which he had been sent by Mr. William Mill of Upholland, Wigan. The history was to the effect that in January, 1903, he first noticed a reddish painless lump of the size of a walnut over the middle of the spine. He did not apply any remedies and after two or three months the lump disappeared. Before its disappearance five small similar tumours appeared over his left ribs. They never attained a larger size than that of a bean and went away spontaneously about the same time as the large lump. For about 12 months he enjoyed good health and saw no more tumours. At the end of that time there appeared scattered over his back a number of painless, reddish lumps of various size which were freely moveable. So far as the patient observed, his general health did not seem to be affected by them. The tumours grew slowly but steadily. When he presented himself at the hospital on Dec. 18th, 1905, there were scattered over his back a number of tumours of varying size; three of these were large, the largest being of about the size of a duck's egg. Large areas of the adjacent skin showed the premycotic condition, which in this case was of the erythematous type, one large disc being very distinct. One of the smaller nodules was removed for the purposes of histological examination, which was made by Dr. F. Perera Wilson. On cutting into the tumour it appeared to the naked eye as a round mass, much denser and firmer than the surrounding tissue and sharply marked off from it. Microscopical examination showed a round mass of densely packed cells in the corium. The cells consisted of connective-tissue cells of various shapes, numerous small round cells, and a few plasma cells. No mast cells were found. In some parts the cells were less deeply stained and were crenated in appearance; granular débris was scattered between them. In some parts of the specimen, especially round the periphery, the cells were arranged in columns. Outside the main mass foci of cells were scattered through the corium. The epidermis was thinned and its interpapillary processes flattened out; there was intercellular œdema.

Treatment by the x rays was given by Dr. Walter C. Oram who is in charge of the electrical department of the hospital. Exposures of ten minutes' duration each were employed twice a week at a distance of nine inches from the anticathode, 0·5 Holzknecht's units being administered at each sitting with rays of penetration 7 on Benoist's scale. In all 15 exposures were given. The facility with which the tumours yielded to the treatment was remarkable, since improvement was noticed after the third sitting and they were completely level with the skin before the hair fell from the adjacent parts of the back. Although the patient was not aware of any deterioration of his general health while the tumours existed he says that since they have disappeared he has felt much stronger. His friends have also told him that he is looking better.

Liverpool.

A CASE OF STRANGULATED RICHTER'S HERNIA AND NON-STRANGULATED APPENDIX IN THE SAC OF A FEMORAL HERNIA.

BY H. REGINALD BURPITT, M.D. BRUX., M.R.C.S. ENG., L.R.C.P. LOND.

A SHORT time ago I was called to see an old lady, aged 76 years, who had been a hospital nurse. On my arrival there was no one else in the house. The patient complained of pain in the legs and abdomen and sickness; she had vomited about three pints of matter, the most recent of which was fæcal. Her history was that she had suffered from a rupture for some months back which felt hard and was at first of the size of a walnut. It gradually became larger; was at first reducible, but for the last few weeks it could not be replaced. There was a great deal of pain. The bowels acted freely throughout. On the day before I saw her she had fallen down, when the pain became worse and vomiting began and continued. On examination there was a swelling of about the size of a hen's egg which had issued through the right femoral ring. It was dull on percussion, tender, and irreducible. After taxis had been applied for a short time unsuccessfully preparations were made for operation. On cutting down the sac was found to be much thickened and to the inside the appendix was found to be adherent at its tip; it was otherwise in a normal condition. A Richter's hernia of the ileum was also present; this, unlike the latter (and herein lies the chief interest of the case), was congested and covered with lymph. The operation was completed, there was no more vomiting, and the patient made a speedy recovery and convalescence.

Llanarthney, Newport, Mon.

CREOSOTAL IN THE TREATMENT OF CROUPOUS PNEUMONIA.

BY J. ALLAN, M.B., CH.B. EDIN.

THE patient in the following case was a youth, aged 17 years, who was admitted to Ayr Hospital on April 23rd, 1905, suffering from right-sided croupous pneumonia.

The history of the illness was as follows. On the previous day he went out to work as usual in the morning. He, however, felt cold and shivery and had pain in the right side of his chest. When he returned home for breakfast he felt weak and could not eat anything. He went to bed and sent for a medical man who diagnosed pneumonia and advised his removal to the hospital. On admission he was found to be a rather anæmic-looking youth of fair development and muscularity. His breathing was rapid and laboured and there was slight cyanosis. He complained of pain on the right side of his chest, the pain being aggravated when he

breathed deeply or coughed. The cough was short and suppressed and the sputum scanty, viscid, and blood-stained. The lower lobe of the right lung was found to be consolidated. The pulse was accelerated and rather feeble but the cardiac sounds were healthy. His temperature at 6 P.M. was 103·4° F. There was no albumin in the urine and the conditions found elsewhere called for no special note. The treatment consisted in the administration of milk, beef-tea, and egg-flip for nourishment; tincture of digitalis in ten-minim doses was given every six hours and creosotal in 30-minim doses every four hours. A mustard leaf was applied locally over the seat of pain. His temperature at 6 A.M. and 6 P.M. during the next four days was as follows: on April 24th, 103·8° and 104·6°; on April 25th, 103·0° and 103·6°; on April 26th, 97·6° and 99·0°; and on April 27th, 98·4° and 98·0°. He was very "heady" during the next two days and had to be constantly watched to prevent his getting out of bed. On April 26th he had the crisis, as above shown, and as soon as his temperature fell he complained of being very hungry, so his diet was increased. On examination of the chest it was now found that the consolidated area had begun to resolve. The tincture of digitalis was now given in five-minim doses thrice daily and the creosotal was reduced to 30 minims three times a day. From this time he improved rapidly. Two days later the creosotal and digitalis were discontinued. Fish and chicken were now added to his diet and three days later he was getting ordinary food. He was allowed up on May 3rd and he did not show those signs of weakness which are often seen after an attack of pneumonia. He was discharged on May 9th.

The points of interest in this case are the cutting short of the course of the disease, the rapid convalescence, and the absence of debility on first getting up. These, I think, were due to a large extent to the treatment with creosotal. There is one important point in connexion with this treatment and that is that the creosotal must not be stopped abruptly but must be continued in smaller doses for a few days after the crisis has taken place.

I am indebted to Dr. Andrew Rowand for permission to publish the case.

Brighton.

Medical Societies.

OBSTETRICAL SOCIETY OF LONDON.

Peritonitis and the Staphylococcus Albus.—Exhibition of Specimens.

A MEETING of this society was held on March 7th, Dr. W. R. DAKIN, the President, being in the chair.

Mr. JOHN D. MALCOLM read a paper on Peritonitis and the Staphylococcus Albus. He commenced with a reference to his view that inflammation and peritonitis might be aseptic processes and mentioned that in Lord Lister's opinion "a certain amount of inflammation, as caused by direct irritation, is essential to primary union." Again, in their lectures on the Bacteriology of Peritonitis[1] Mr. Leonard S. Dudgeon and Mr. P. W. G. Sargent stated that they found the staphylococcus albus in the peritoneal sac in almost every variety of peritonitis and invariably in the intra-peritoneal blood clot associated with the rupture of extra-uterine fœtation sacs; they showed that this coccus was frequently in the peritoneal sac when there was no evidence of its presence except that of the microscope or of culture investigations and that it was an organism of very low virulence; they nevertheless came to the conclusion that "the febrile disturbances so frequently found after effusion of blood into the peritoneal cavity are due to the presence of this organism." Mr. Malcolm maintained that the conclusion that the staphylococcus albus was the cause of the well-marked inflammation attributed to it could be upheld only if it was already regarded as proved that a micro organism must be present before inflammation could develop. Attention was drawn (1) to the fact that Mr. Dudgeon and Mr. Sargent found in cases of strangulated hernia that in 30 cases out of a total of 46 the intestines, which were in all stages of inflammation and congestion, were sterile; and (2) to their opinion that staphylococci showed many grades of pathogenicity. Mr. Malcolm further argued that a staphylococcus which was present invariably in intra-peritoneal blood clot and which might exist therein without pus formation for three months was a different coccus from that which produced suppuration. He considered that there was no satisfactory proof that this non-pyogenic coccus had any harmful effects. His general conclusions were as follows. 1. That inflammation was a curative process bringing about union by first intention. 2. That tissues in the peritoneal cavity dying because they had become separated from their natural connexions (strangulated tumours, ligatured parts, and blood clot) could be revived only by the inflammatory process and by a consequent formation of adhesions; that there was no reason to suppose that micro organisms were necessary to the production of these processes and therefore that inflammation of the peritoneum might arise without the action of micro-organisms. 3. That, although practically all dangerous inflammations were septic, yet the science of bacteriology in so far as it was connected with wounds, must be founded on views that recognise the possibility, or rather the constant occurrence, of inflammation in connexion with aseptic injuries. This was the teaching of Lord Lister. 4. That when septic complications took place in a wound, the micro-organisms tended to interfere with the proper course of the inflammation which necessarily accompanied an injury. 5. That a very small damage to tissues might enable slightly pathogenic or innocuous staphylococci to effect an entrance through apparently healthy epithelial surfaces and perhaps in other ways. The condition was an undesirable and dangerous one, because a little more damage would enable a more powerfully pathogenic organism to invade the tissues, and when a sufficient degree of mischief arose the most virulent organisms might enter and produce their various effects as if they were introduced through an incision. 6. That surgical fever was due to peripheral stimuli and that the theory that fever was necessarily caused by some substance circulating with the blood and acting on a heat centre was unsatisfactory, because by it the irritation which occurred in a wound, and which occurred all over the body in septic conditions, was entirely ignored as having any possible influence on the temperature.

Mr. DUDGEON having made some remarks, Mr. SARGENT commented on the manner in which the terms "aseptic" and "sterile" had been used by Mr. Malcolm and contended that those terms had been used by himself and Mr. Dudgeon in a different sense; the one to express the meaning ordinarily ascribed to it in surgery—namely, as applied to a wound which presented no clinical sign of inflammatory reaction; the other, in its strict bacteriological sense. Mr. Sargent held that their experiments, as well as those of Professor Welch, had shown that a wound could be aseptic and at the same time not sterile, and that organisms could be cultivated from the deeper parts of an aseptic wound several days after the operation. The conclusion at which he and Mr. Dudgeon had arrived—namely, that the so called "chemical peritonitis" did not exist—was based upon the fact that the number of those cases to which the term had in the past been applied was found to diminish rapidly on bacteriological investigation and that the circumstance of their being unable to demonstrate the presence of micro-organisms in the peritoneal exudate was no proof that the whole of the peritoneal cavity was sterile. It was highly probable that in an area so large as the peritoneal cavity there would be cases in which the presence of micro-organisms would escape detection. At any rate, Mr. Malcolm had adduced no experimental work whatever in support of his belief in non-microbic peritonitis. With regard to the nature of the white staphylococcus found so frequently in peritoneal lesions, Mr. Dudgeon and he had been at pains to demonstrate that it was not the same as the staphylococcus pyogenes albus and they had never suggested that it was the cause of the suppuration which sometimes followed upon an old pelvic hæmatocele.

Mrs. M. A. D. SCHARLIEB, M.D., showed a specimen from a case of unusual Malignant Disease of the Uterus.

Dr. CUTHBERT LOCKYER showed the Uterine Appendages in two cases which illustrated a deficiency in the development of the central part of the Fallopian tubes and congenital hypertrophy of the round ligaments. He also showed three cases of Diffuse Adeno-myoma Uteri.

Dr. WALTER W. H. TATE showed a specimen of Carcinoma of the Ovary.

[1] The Erasmus Wilson lectures, THE LANCET, Feb. 25th (p. 473), March 4th (p. 548), and March 11th (p. 617), 1905.

LIVERPOOL MEDICAL INSTITUTION.

The Infectious Hospital at Fazakerley.—Treatment of Chorea.—Congenital Umbilical Hernia.—Treatment of Tuberculosis by Intravenous Injections of Formic Aldehyde.

A MEETING of this society was held on March 15th, Mr. FRANK T. PAUL, the President, being in the chair.

Dr. E. W. HOPE gave a short description, illustrated by numerous limelight views, of the new Liverpool City Hospital for Infectious Diseases at Fazakerley. He said that the hospital area was amply large, consisting of 118 acres, and had upon it two establishments—one for small-pox, containing 160 beds, and another for the ordinary forms of infectious disease, containing 350 beds. The plan, construction, and arrangement were of the most modern type and much advantage had been derived from visits made to other hospitals designed with a similar object in other parts of the United Kingdom. The architect was Mr. Shelmerdine, the corporation surveyor. The hospital would be opened in a few weeks and would be under the supervision of Dr. C. Rundle, the medical superintendent.

Dr. CHARLES J. MACALISTER read a note on Chorea in which he expressed the opinion that just as the rheumatoid fevers, which so closely resembled acute rheumatism, were due to an entirely different toxin, so chorea, which presented features associated with the rheumatoid diathesis, was probably due to a toxin different in its constitution as well as in the effects it produced from that of rheumatic fever. He discussed the various types of chorea, especially those which tended to be associated with endocarditis and joint pains as distinct from those which did not, and suggested that the conditions, although presenting symptoms in common, might be due to essentially distinct toxins. He referred to his view that the explanation of the long course of chorea depended on the toxins being neutral, as stimuli, to the organs of elimination, and that success in treatment would probably depend on the addition to the blood of some substance which would alter the constitution of the toxin and convert it into a stimulus for the skin or kidneys, which would then be able to remove it. Dr. Macalister had tried giving peroxide of hydrogen, especially in cases of chorea presenting skin eruptions (peliosis rheumatica), and he thought some benefit had followed its use.

Mr. R. C. DUN read notes of a case of Congenital Umbilical Hernia. The protrusion was rather larger than half the size of the child's head. It was covered partly by true skin and partly by a thin membrane in which necrotic changes were taking place. The cord was attached to this thinned portion of the covering. The contents were irreducible but not strangulated. Percussion gave a tympanic note. Operation was not attempted owing to the weakly condition of the infant and he died from septicæmia on the sixteenth day after birth. A necropsy could not be obtained; the nature of the contents and coverings of the hernia was therefore not definitely ascertained. It was, however, probably an example of the embryonal type of umbilical hernia—namely, a persistency of the developmental condition which was normally present during the first three months of intra-uterine life.

Dr. F. W. BAKER YOUNG read a paper on the Treatment of Pulmonary Tuberculosis by the Intravenous Injection of Formic Aldehyde. He commenced with a reference to the lectures delivered by Dr. Robert Maguire before the Harveian Society of London in November, 1900, in the third of which lectures[1] Dr. Maguire's method of injecting hæmasepsin, a solution of formic aldehyde in normal saline solution, and the strength of the solutions used might be found. The treatment of an advanced case took about six months; at the end of six weeks, if the treatment was going to be of any service, the patient showed a marked improvement both in physical signs and symptoms. The immediate results of injection were (1) pain over the vein, which, if severe, could be relieved by firm pressure; (2) increase of moist sounds in the chest for a short time; (3) suffocative cough of a few seconds' duration; (4) taste of formaldehyde; (5) odour of formaldehyde in the breath; and (6) rigors, which occurred in every case but not after every injection, varied considerably in their severity, and were to be treated by hot-water bottles, hot drinks, &c. Formaldehyde could be recognised in the urine and sputum by the following test: If five centigrammes of resorcin, five cubic centimetres of a 50 per cent. solution of carbonate of sodium, and five cubic centimetres of the solution of formaldehyde were well boiled a permanent red colour was formed distinguishing formaldehyde from all other aldehydes. This reaction would take place in a dilution of 1 in 10,000,000. Formaldehyde could be detected in the urine one week and in the sputum two days after an injection of the solution of strength 1 in 500. If it were objected that formaldehyde would be rendered inactive by reacting with other substances, he would reply that, since the velocity of any reaction was proportional to the concentration of the reacting substances and that with injections of the strength of 1 in 500 the dilution would be in the pulmonary circulation 1 in 25,000 and in the systemic circulation still greater, reaction with other substances in the blood, if any, must be extremely slow; that very little reaction took place was proved by the appearance of formaldehyde in the urine a week after the injection. Dr. Young then read notes of a case of Pulmonary Tuberculosis of nine years' duration which he had treated by this method for seven months. The chronic course of the case had been interrupted by three acute attacks marked by high temperatures and hæmorrhages in the years 1896, 1900, and the autumn of 1904. Injections were begun on Feb. 26th, 1905. At that time the physical signs were well marked and bacilli were abundant in the sputum. A steady improvement took place until, in August, no bacilli could be found in the sputum. The injections were continued until October when examination revealed no signs of active tuberculosis, though a small area of dulness existed where formerly a pleuritic rub could be heard. The urine had never contained albumin and the diazo-reaction, tried twice towards the end of the illness, was negative. The patient was now sheep-farming in South America and reported himself free from recurrence.—Dr. ROBERT MAGUIRE, who was present as a visitor, in the course of an interesting speech replied to his numerous critics and stated that the method was entirely free from danger. It was not claimed that formaldehyde could cure all cases but the results obtained were often very remarkable.—Dr. J. TORREY, formerly professor of chemistry in the University of Harvard, who was also present as a visitor, stated that in such dilute solutions any of the ordinary chemical reactions peculiar to formaldehyde would be extremely slow and pointed out that it had been shown that condensation products of formaldehyde with more complex bodies were usually antiseptic; such reactions, at least, would not render formaldehyde inert toward bacilli.—Dr. A. G. GULLAN said that he thought that the apparatus would be most useful in administering any kind of intravenous injection. He had employed formalin in this way in three cases and had never seen any harm accrue, though about half the injections were followed shortly by rigors lasting for nearly two hours. His first case was one of advanced acute miliary tuberculosis of the lungs which, after a slight temporary improvement, rapidly advanced and ended fatally. The other two cases were favourable ones in young men in whom, beyond a diminution of moist râles, no improvement took place; he doubted whether the same result could not have been got by other methods of treatment.—Mr. G. S. STANSFIELD said that he had welcomed Dr. Maguire's plan as a substitute for that of impregnating the air with formaldehyde. In January and February, 1901, he had treated six cases by this method but was disappointed with the result. He quite agreed, however, with Dr. Maguire that there was no danger in the method, neither was there any great difficulty if the directions were closely followed. He thought that hæmasepsin ought to be put on the market at a more reasonable price considering the inexpensiveness of its constituents.—Dr. JOHN HAY, Dr. R. J. M. BUCHANAN, Dr. MACALISTER, Dr. T. F. YOUNG, Dr. J. HILL ABRAM, and Mr. W. THELWALL THOMAS continued the discussion.

[1] THE LANCET, Dec. 15th, 1900, p. 1709.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on March 14th, Dr. J. W. Ballantyne, the President, being in the chair.—Dr. J. Haig Ferguson read a paper on Abdominal Hysterectomy for Acute Puerperal Metritis and Acute Salpingitis, with a record of a successful case. He said that it was comparatively seldom that the performance of hysterectomy in such cases was justified but there were occasions when such an operation might save life. Neither examination of the blood nor of the secretions from the uterus could give certain information as to whether hysterectomy was indicated or not.

The general condition of the patient, a careful local examination, and the failure of ordinary treatment would form the basis for suggesting operation. A final decision might not be arrived at till the abdomen had been opened. Valuable help might be obtained from a leucocyte count and the glycogenic reaction. Dr. G. L. Gulland had pointed out that when there were general septicæmia and a low leucocyte count it meant that the patient was overwhelmed and in such a case it was inviting disaster to operate. In localised suppuration it was usual to find the reverse—namely, a high leucocyte count, a high polymorphonuclear range, and marked glycogenic reaction. In general peritonitis the indications were to open the abdomen, to search for all foci of suppuration, and to drain the cavity through the vagina. Hysterectomy could be performed at the same time if necessary. The washing out and draining of the peritoneum should be through Douglas's pouch. In all cases of puerperal infection which had resisted ordinary treatment, when the patient's condition was getting worse or when there was no cellulitic abscess which could be evacuated through the vagina, then an abdominal section should be performed and the subsequent procedure determined according to the condition found. He (Dr. Ferguson) had recently under his care a woman, 25 years of age, who was removed to Leith Hospital on Feb. 16th from the Leith Fever Hospital where she had been sent by a medical practitioner as a case of puerperal fever. She had been confined with her sixth child on Jan. 29th. The child was born naturally and easily. The midwife made only two vaginal examinations before the child was born; the placenta came away in half an hour and there was considerable hæmorrhage during the third stage of labour. Four days after labour the patient began to feel pain in the right iliac region. She got up as usual on the eleventh day but did not feel well. On Feb. 16th she had a rigor with severe pain in the right side. On admission to Leith Hospital her temperature was 100° F. and her pulse-rate was 120; she was suffering severe pain. In the right iliac fossa a very tender firm mass was felt which extended down to the pelvis; indefinite fluctuation could be detected per vaginam; the uterus was enlarged and tender. The sanguineous vaginal discharge had a heavy odour but a vaginal douche and cleansing were sufficient to cause its disappearance. On Feb. 18th her blood showed a leucocytosis of 24,000 per cubic millimetre, an increase almost entirely polymorphic; no organisms could be detected. On Feb. 21st the pain was very severe, vomiting had occurred several times, and the general condition was such as to cause anxiety. At the operation on that day the intestines and omentum were found to be matted together, especially on the right side, by extensive adhesions and some fluid was imprisoned by the adhesions in the right side of the peritoneal cavity. There was no general peritonitis. The uterus showed gangrenous inflammation, especially over two very definite areas; this part was covered by thickened inflamed omentum. The right Fallopian tube was acutely inflamed. As time was of consequence and as the condition seemed to be limited to the upper part of the uterus, supravaginal hysterectomy was decided on. An opening was made in the pouch of Douglas, an indiarubber drainage-tube was inserted, and the peritoneal cavity was thoroughly washed out with sterilised water. By the fifth day after the operation the temperature and pulse were normal, and the patient was now doing very well. In the muscular wall of the uterus several small abscesses were found; the endometrium presented no signs of acute endometritis.—The President, Dr. A. H. F. Barbour, Dr. E. Scott Carmichael, and others made remarks on the paper.—Dr. F. W. N. Haultain read a paper on a Clinical Experience of Ectopic Pregnancy and Allied Conditions. He said that a typical case of ectopic pregnancy was recognised by amenorrhœa, followed by irregular hæmorrhages and discomfort in the side, culminating in the shedding of uterine casts, with intense abdominal pain and more or less shock. In some cases, even to the expert, a positive diagnosis was not only difficult but almost impossible. Dr. Haultain recorded 30 supposed cases, of which 23 were verified ectopic gestations. In the 23 cases amenorrhœa was absent in five, irregular hæmorrhage was absent in four, pelvic pain was absent in four, and shedding of decidua was absent in 16. The frequent and irregular hæmorrhage gave rise to most apprehension on the part of the patient. Where does the blood come from? A decidua formed in some cases in the tube and even in the opposite tube. Separation of the ovum in the tube occurred very easily and bleeding resulted; if the blood were retained the tube would be liable to burst. By its escape rupture was avoided; it escaped either through the abdominal ostium into the peritoneal cavity and occasioned abdominal symptoms or it might escape inwards to the uterus. When there was extensive separation it was probable that the blood would pass in both directions. It was probable that the uterine decidua was not shed in the majority of cases until the death of the ovum. The blood might be encapsuled by local peritonitis and afterwards absorbed or form an abscess, and the ovum on dying might remain in the tube, forming a tubal mole, which, if small, might become absorbed and the tube become patent and quite restored. Usually, however, an atresia resulted forming hæmatosalpinx, and prolonged symptoms of pelvic discomfort resulted. In four cases recurrence of tubal pregnancy occurred in the opposite tube, in one within nine months. In treating these cases they should be considered in the light of a malignant growth and a continued menace to life as long as the condition was present. To temporise in the hope that absorption and spontaneous cure would occur was a mistaken policy.

ROYAL ACADEMY OF MEDICINE IN IRELAND: SECTION OF MEDICINE.—A meeting of this section was held on March 2nd, Dr. John M. Finny being in the chair.—Dr. Henry C. Drury with Dr. William Taylor brought forward a case of Cirrhosis of the Liver in which an operation was performed for the relief of ascites. The patient developed acute ascites, apparently within a week, with great œdema of the legs and suppression of urine to three ounces. The abdomen was tapped, but no great increase of secretion of urine resulted, and it began rapidly to diminish as the ascites again collected. The Talma-Morrison operation was then performed; the patient made a good recovery and now was daily at work.—Dr. T. Gillman Moorhead read a paper on Anæmia Splenica Infantum and exhibited the organs from a case of the disease. The patient was a child, aged three years, with a good family history, who had developed symptoms of anæmia with abdominal distension after an attack of measles a year previously. On admission to hospital the spleen was found to be enlarged enormously, extending down as far as Poupart's ligament and forward as far as the umbilicus. There were slight rickety signs and the blood was in every way typical of von Jaksch's disease except that there was no increase of white cells. Normoblasts were very abundant and there was marked polychromatophilia. Iron, arsenic, and bone marrow were given at first and the child was carefully dieted but without any signs of improvement taking place. Later x ray treatment was adopted, the rays being directed upon the spleen, but without any apparent effect, and the child died six weeks after coming under observation. At the necropsy the spleen was found to be extremely fibrosed; the liver showed slight fatty degeneration; most of the abdominal and thoracic lymph glands were enlarged and light-red in appearance, and showed fibrosis associated with congestion; the bone marrow of both femur and tibia was normal and there was no alteration in the thymus gland or other viscera.—Dr. W. Langford Symes, Dr. R. Travers Smith, and Dr. Peacocke discussed the case. The last mentioned a similar case under his care which had recovered.—Dr. J. B. Coleman read the notes of a case of Unresolved Pneumonia in which the inoculation of pneumococcus vaccine, according to Professor A. E. Wright's method, was followed by a satisfactory result. The patient, who was a man, 50 years of age, was admitted to the Whitworth Hospital, Dublin, on Dec. 20th, 1905, suffering from a very severe attack of acute croupous pneumonia, the onset of which had occurred six days previously. On admission he was in a low typhoid state, his pulse ranging from 126 to 138, and his respirations from 44 to 48 per minute respectively; his temperature was 102·6° F. There was consolidation of the upper and middle lobes of the right lung. On the 23rd the consolidation had involved the lower lobe of the right lung and on the 26th the lower lobe of the left lung was similarly affected. There was no critical fall of temperature and though the patient's condition somewhat improved convalescence was very slow. On Jan. 14th, 1906, a painful inflammatory swelling developed in the left supraclavicular region but subsided in three or four days. On the 20th there were dulness and tubular breathing over the entire right lung, with, in addition, crepitation over the lower lobe; the left lower lobe was dull on percussion. At this date, 37 days after the onset of the disease, the patient's general condition was very unsatisfactory and there was no sign of

resolution in the lungs. On the 21st the pneumococcus opsonic index was 0·60 and on the 23rd it was 0·62, whilst the tubercle opsonic index was 1. On the 24th he was inoculated with 46,500,000 pneumococci. On the 25th the pneumococcus opsonic index was 0·69. The inoculation was followed by no local or constitutional disturbance. The physical signs in the lungs were such as might be present in pneumonia of five or six days' standing. On the 30th the pneumococcus opsonic index was 1·17. On the 31st the patient looked and felt better, and there was marked improvement in the physical signs in both lungs. On Feb. 3rd the pneumococcus opsonic index was 0·89 and on the 6th it was 0·91. On the 8th the left lung was found to have cleared up. The only physical signs in the right lung were dulness and tubular breathing at the apex and diminished resonance over the lower lobe. On the 9th an injection of 46,500,000 pneumococci was given. On the 12th the pneumococcus opsonic index was 1·13. On the 20th the patient was in excellent health. He had increased in weight eight and three-quarter pounds since Feb. 1st. The physical signs in the lungs were as on Feb. 8th. On the 22nd the pneumococcus opsonic index was 1·09; on the 23rd it was 1·06; and on March 2nd it was 1·07. Dr. Coleman remarked that it would not be fair to deduce too much from a single case; but the facts pointed to the favourable result being due to the injection of pneumococcus vaccine administered by Professor Wright's method. Dr. A. C. O'Sullivan had made, and had supplied him with, the pneumococcus vaccine used.—Sir John W. Moore deprecated the treatment of pneumonic fever by antipyretics. He believed that high fever, if not of too long duration, was followed by rapid resolution.—Dr. Joseph F. O'Carroll, Dr. Travers Smith, Dr. Moorehead, and Dr. Henry Stokes also discussed the case.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Feb. 28th, Dr. J. K. Kelly, the President, being in the chair.—Fresh specimens were shown by Dr. G. Scott Macgregor, Dr. S. J. Cameron, Dr. J. M. Munro Kerr, and the President.—Dr. James Laurie (Greenock) read a paper on Cæsarean Section for Rachitic Pelvis. The patient, a II-para, had craniotomy performed on her first child 18 months before. She was aged 27 years and was 4 feet 8 inches in height. The conjugate measured under two inches. At the time of labour there was a foul discharge from the vagina, the head not attempting to engage, and the patient was in constant pain. Cæsarean section was performed in the patient's own home; the child was alive but only survived 18 hours. The patient did well.—Dr. Laurie also read notes on two cases of operation for Incomplete Rupture of the Perineum. Both patients suffered from lacerations at the first birth; in neither case was stitching performed, and both patients suffered from subsequent rectocele and discomfort. Dr. Laurie in his operations adopted the method advised by Pryor—the vaginal mucous membrane was dissected off over a triangular area, the apex being at the highest point of the rectocele, the sides passing external to the lateral retracted angles, and the base being the muco-cutaneous border of the vaginal outlet. The sutures were passed from the apex downwards, the material used being 16 day chromic gut, silkworm gut being used at the retracted angles; these latter were passed deeply in so as to grasp the fibres of the levator and its fascia. This operation gave a perineum of two and a half inches; it reduced the rectocele and kept the vaginal walls in contact.—Dr. R. O. Adamson read a Note on Two Cases of Puerperal Pyelonephritis. Both patients recovered. Dr. Adamson called attention to the following points. The urine should be examined periodically during pregnancy for pus and if necessary the bladder and urethra. If cystitis arose it should be carefully looked after. If the catheter had to be used during the puerperium injections of boric acid solution should be used for the bladder and boric acid and salol should be given internally.—Dr. Jardine had had experience of one patient who had pyonephrosis and calculus before delivery and abscess discharge by the ureter into the bladder, and the patient did well. There was, he considered, a great risk from the use of the catheter during the puerperium.—Dr. Munro Kerr had one case during pregnancy; when the catheter was used he gave prophylactic treatment—douching out the bladder.—Dr. Carstairs C. Douglas had known the bacillus coli as being the cause of the worst form of cystitis.—The President and Dr. Cuthie also spoke.—Dr. Adamson replied.—Dr. Archibald T. Campbell read brief notes of a case of Measles in a multipara at the end of pregnancy, labour occurring on the third day of fever.—Dr. Baird, Dr. Caskie, Dr. Jardine, Dr. Munro Kerr, and the President discussed the case.—Mr. D. James Craig read a paper on two cases of Hydramnios.

FORFARSHIRE MEDICAL ASSOCIATION.—A meeting of this society was held in Dundee on March 8th, Dr. D. Lennox, Vice-President, being in the chair.—Cases were shown by Dr. A. McGillivray and by Dr. H. Buist.—Dr. G. A. Pirie showed a case of Lupus successfully treated by X Rays.—Professor D. MacEwan exhibited specimens obtained from a patient sent into hospital with Intestinal Obstruction but who died from collapse following perforation of the bowel before an operation could be attempted. On post-mortem examination the whole small intestine was found to be studded with small adenomatous growths. There was a large adenoma at the hepatic flexure causing complete obstruction and not far from this was a small perforation. A large tumour of the size of the fœtal head was found in the right suprarenal gland which on macroscopic and microscopic examination appeared to be more of a sarcomatous nature. Another complex Renal Tumour with Pyonephrosis and Suppurative Nephritis was also shown.—Dr. W. E. Foggie read notes of a case of Congenital Dextrocardia which he had had under observation since birth and on which he had lately obtained a post-mortem examination. The child, who lived to the age of two years and ten months, had sprung from a stock prone to rheumatic and cardiac affections. In addition to the displacement there was a loud systolic murmur and also latterly a diastolic. The general growth and appearance were those of one subject to congenital heart disease or heart defect. Death resulted from convulsions after a few weeks' attack of whooping-cough. The necropsy showed a heart on the right side. The other organs were not transposed. There was a common auricle and the interventricular septum was defective. The pulmonary and aortic valves were normal but the tricuspid and mitral were markedly incompetent. The ventricular walls were thickened and showed fatty degeneration of their substance. There was no evidence of lung disease and the diaphragm was intact. There were now about 50 cases of congenital dextrocardia on record but only a few of these had been confirmed after death. Apart from those due to lung disease or to total transposition of the viscera cases of congenital dextrocardia generally owed their origin to diaphragmatic hernial, lung malformation, or embryonic errors in the heart areas. The malposition in the last was generally accompanied by some heart defect.—Professor A. M. Stalker, who had seen the case in life, said he had some difficulty in coming to the conclusion that it was one of congenital dextrocardia in the ordinary sense of the word, as complete displacement was so very uncommon. It might have been acquired and caused by the excessive preponderance of the auricles but the fact of the apex beat always being to the right was against this supposition.—Dr. A. Don read notes on the Diagnostic Value of Radiography in Tuberculous Disease of Bone.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on March 16th, Mr. W. Campbell McDonnell, the President, being in the chair.—Dr. Lewis Smith read a paper on Some Practical Points on Albuminuria. He said that albuminuria was a common and important symptom which might or might not be of vital importance. It was always a sign of disease but the kidneys were not necessarily the seat of the disorder. The actual quantity of albumin present was of less importance than the fact that albumin was constantly present in the urine. Casts were always to be regarded as certain evidence of kidney mischief, especially in young people. The naked-eye examination of urine was very important in all cases of albuminuria. Peculiar floating threads indicated chronic inflammation of the deep glands of the posterior urethra. Bilharzia after the Boer war was a common cause of albuminuria and could be recognised by the presence of small clots of blood in the urine. Postural albuminuria was found in young men who passed a small and varying amount of albumin. They were often slightly anæmic and had fainting fits. While lying in bed the albumin decreased or disappeared; there were no casts, the specific gravity and amount of urea became normal, and there was no hypertrophy of the heart or thickened vessels. Recognition was all-important as the prognosis was good, for the only risk was that they were a little more liable than normal persons to a possible nephritis from cold or scarlet fever. Professor A. E. Wright found that in these

cases there was diminished coagulability of the blood and that if they were treated with calcium chloride or lactate the albumin disappeared. In any young subject with albuminuria without the other accompaniments of chronic nephritis postural albuminuria should be remembered, which might be regarded as due to a "tired" kidney, perhaps due to anæmia, strain, cold, or overwork, where the function of preventing the passage of albumin was temporarily in abeyance. A kidney might develop organic disease and yet recover. A transitory nephritis might be set up by diphtheria, tonsillitis, emboli, and drugs—e.g., turpentine, cantharides, and rhubarb. Alcohol was an irritant which would cause a transitory nephritis and, if long continued, would set up a chronic nephritis. Post-scarlatiniform glomerular nephritis was due to cold, getting up too soon, or to a diet too rich in meat extractives. In true nephritis uræmia was the great danger. They did not yet know its cause but it was possible that the kidney had an internal secretion and that the symptoms of uræmia might be due to a want of the internal secretion in a kidney which was becoming fibrous.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held on March 7th, Dr. G. W. Hamilton Cumming (Torquay), the President, being in the chair.—Dr. D. Chalmers Watson (Edinburgh) read a paper entitled "Observations on Diet, with special reference to a Meat Diet and Uric Acid." After a brief reference to the clinical features of acute gout and to the evidence in favour of the infective origin of this condition, he dealt with the subject of irregular gout as illustrated by the clinical features of disease observed (1) in the children of gouty parents, and (2) in adults. Stress was laid on the importance of recognising the distinct, yet intimately related, conditions—acute gout and so-called goutiness. The former was in all probability an acute infective process; the latter, as it occurred in the children of gouty parents, could reasonably be explained as a hereditary deficiency in the digestive juices (using that term in its widest sense) or an idiosyncrasy in metabolism which rendered the subjects prone to this particular type of infection. In considering the clinical features in children attention was directed to the cutaneous disturbances and their frequent association with digestive disorders; also to naso-pharyngeal and bronchial catarrh and to the class of case recently described by Dr. Eustace Smith as "food fever in children," a condition which Dr. Watson had observed in the children of typically gouty people. The development of gouty symptoms at the climacteric both in men and women and the frequent occurrence of glycosuria, phosphaturia, and obesity were also commented on. Dr. Watson had made an experimental investigation into the effects of an excessive meat diet on the structure and functions of some important organs in the first and also in the second generations of meat-fed animals. The detailed results of this investigation were in course of publication. They led to the following conclusions: (1) An excessive meat diet modified the structure and function of the thyroid gland and this modification was very pronounced in the offspring of meat-eating parents; (2) the kidneys of the offspring of animals fed on an excessive meat diet were hypertrophied and were therefore subjected to greater strain than in perfectly normal animals; and (3) the mucous membranes of young animals brought up on an excessive meat diet were in the majority of cases modified in structure and exceptionally susceptible to bacterial invasion. He expressed the belief that a modification in the function of the thyroid gland and an associated renal inadequacy were included among the hereditary idiosyncrasies in the nutrition of typically gouty subjects.—Dr. François A. Mouillot (Harrogate) said that important structural changes would naturally follow on the excessive use of food unsuitable to the animal and such changes would probably occur if a carnivorous animal was fed on bread. The facts that the children of gouty parents often suffered from fever only cured by abstention from all farinaceous food and that in middle life obesity and glycosuria were so common in gouty people showed that in man excess of carbohydrates was often the determining factor of gout.—Mr. Ernest Solly (Harrogate) said that gout, rheumatism, and rheumatoid arthritis were all in a sense due to a microbic infection; but in the growth of all micro-organisms the "soil" was very important. In human beings this was called the "constitution" and its importance in the case of tuberculosis needed no mention.—Dr. R. Fortescue Fox suggested that the gouty disturbances of middle life were due not so much to meat foods as to a habitually excessive diet and to mixtures of foods.—Dr. F. J. Poynton repeated an opinion which he had expressed five years ago—namely, that the best guide to a study of gout was a study of bacterial toxins and not of uric acid.—Dr. F. Parkes Weber mentioned that Burton-Opitz had found an increase in red blood cells in certain animals fed on a meat diet, whereas J. Bence had failed to observe a similar change in the blood in men treated by increase of meat in the diet.—The next ordinary meeting of the society will be held at Bath on March 31st at 4 P.M., when the President will open a discussion on the Treatment of Disease by Thermal Methods. At 7 P.M. the Fellows will dine at the Empire Hotel and at 9.30 P.M. the Mayor and corporation will entertain them at a *soirée* at the Pump Room.

CORK MEDICAL AND SURGICAL SOCIETY.—A meeting of this society was held on Feb. 28th, Dr. R. P. Crosbie, the President, being in the chair.—Dr. J. Cotter read notes of a case of Vesical Calculus in a Girl, aged nine years. The patient did not complain of pain until December last but the urine had been "heavy" for some time previously. The pain was increased by jolting and blood appeared in the urine, whilst vesical tenesmus and sudden stoppage of the flow occurred. Examination revealed a greatly enlarged clitoris and per rectum, as well as by using the sound, Dr. Cotter found that a large calculus was present. He decided to perform suprapubic cystotomy and in order to raise the bladder as high as possible put the patient in the Trendelenburg position, which proved more convenient than the rubber bag in the rectum. He had no difficulty in removing the stone, which was as large as a Brazil nut and, as its section showed, composed of phosphates laid down on a nucleus of uric acid. The bladder was drained with a rubber tube and the wound closed in 18 days.—Dr. W. E. A. Cummins showed a girl, aged 16 years, on whose Left Knee he had done an Excision four years ago. He used Allingham's method—i.e., longitudinal section of the patella—and removed all the affected tissues. The patient made a good recovery and he showed her to the society at that time. Unfortunately, some time after this she injured the joint in a fall and presented herself again with the knee flexed at right angles. He again operated, this time adopting the transverse U-shaped incision, with transverse section of the patella, and removing a wedge-shaped piece of bone. The result was that the patient had an excellent limb which was only one and a half inches short.—Dr. Cotter preferred the U-shaped incision, as it gave better access to the joint, and thought that it was of the utmost importance to fix the joint carefully after operation. He recommended House's splint for that purpose.—Dr. Cummins, replying, disagreed with Dr. Cotter about the incision. Having tried both, he found Allingham's method more satisfactory.—Dr. Barry gave an account of Secretin, its Preparation and Use in the Treatment of Diabetes Mellitus.—Dr. Cummins showed Suprarenal Glands of a patient affected with Addison's disease.—Dr. J. Booth read notes of the case of a young lady with a history of indigestion, who had suddenly been seized with intense pain and collapse, followed by vomiting. Examination revealed intense tenderness in the epigastric angle—the seat of the pain—board-like rigidity of the recti muscles, and disappearance of the liver dulness. The temperature was 97° F. and the pulse was 115, the respirations were rapid, shallow, and thoracic, whilst the patient had a very anxious expression of countenance. Recognising the gravity of the case and suspecting a small perforation of a gastric ulcer, a second opinion was asked for and Dr. Cummins confirmed the diagnosis. The friends refused to put her into hospital and would not hear of an operation should such prove necessary. Accordingly morphine was administered hypodermically for 48 hours, saline enemata, which were well retained, were given twice daily, and nothing at all was given by the mouth for a week, the patient being fed on nutrient enemata, every four hours. At the end of a week hot water in small quantities was given by the mouth, subsequently albumin water and chicken broth, and finally peptonised milk. The temperature varied between 99·2° and 100·8° for the first week or ten days, the pain and tenderness gradually disappeared, and the patient made a good, if tardy, recovery.

SOUTH-WEST LONDON MEDICAL SOCIETY.—A meeting of this society was held on March 14th, Dr. M. Mackintosh, the President, being in the chair.—A paper was read by Mr. W. I. Hancock on Gonorrhœal Ophthalmia. Mr. Hancock observed that no disease of the eye gave rise to greater anxiety to the practitioner. Clinically there were two well-defined groups of cases—viz., (1) in the newly born; and (2) in the adult. As regards ophthalmia neonatorum, there was a tendency to attribute all cases to the gonococcus. This was fallacious, for at least one-third of such cases were due to other organisms. This was not surprising when it was remembered that a great number of pregnant women suffered from catarrh of the vagina with a purulent discharge. The incubation period was usually three, and practically never more than five, days after birth. If discharge made its appearance later it was most likely due to some want of cleanliness on the part of mother or nurse. The systematic use of a 2 per cent. solution of silver nitrate dropped into the conjunctival sac immediately after birth had practically abolished this disease from lying-in establishments. Ophthalmia neonatorum was therefore preventable. Irrigation of the vagina for some days before the onset of labour was another important prophylactic measure when there was a purulent vaginal discharge. As to the treatment of a fully developed case, it was a golden rule in ophthalmic surgery never to tie up an eye in which the conjunctiva was secreting pus. It was important, too, to ascertain the condition of the cornea before commencing treatment. Treatment might be summed up as follows: 1. Frequent irrigation with boric acid lotion or perchloride of mercury lotion (not stronger than 1 in 6000). Irrigation should be carried out every two hours, day and night. 2. Application of one of the silver compounds, of which silver nitrate held its ground over all others. Of the newer preparations protargol and argyrol were the best. The following precautions were necessary in the use of nitrate of silver: (*a*) never use a solution stronger than ten grains to the ounce; (*b*) never use it more than once in 24 hours; (*c*) never use it after the discharge has ceased; and (*d*) swab up all excess of the solution after its application. The treatment of gonorrhœal ophthalmia in the adult depended upon the stage of the disease. In the first stage, or stage of infiltration, with swelling of the lids and conjunctiva, with only serous discharge, frequent irrigation was necessary, with iced compresses in the interval between the washing. In the second stage, when the swelling of the lids diminished and there was a free secretion of pus, silver nitrate should be applied in the way described for ophthalmia neonatorum. In the third stage, or stage of resolution, where the conjunctiva remained swollen and hyperæmic, the use of an astringent lotion, zinc sulphate (two grains to the ounce), hastened the cure. Where one eye only was affected the fellow eye should be protected by a Buller's shield.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Liverpool on March 16th, Mr. R. Favell, the President, being in the chair.—Dr. D. Lloyd Roberts showed a Myomatous Uterus removed because it was causing retention of urine (40 ounces were withdrawn by catheter). The patient, aged 42 years, was anæmic after four years of menorrhagia. Four fibroids were enucleated from the mass as a preliminary step to supravaginal hysterectomy. This course was strongly recommended in certain cases as it not only reduced the bulk but also much increased the mobility of the uterus, so facilitating its removal.—Sir William J. Sinclair and Dr. W. E. Fothergill (Manchester) showed a Sarcoma of the Labium Majus which had occurred under a large pigmented mole of the labium and buttock in a girl, aged 19 years. The tumour was composed of connective tissue continuous with that of the cutis vera and was in some parts richly cellular.—Dr. W. Walter (Manchester) gave particulars of a case of Abdominal Hysterectomy for Cancer of the Body of the Uterus. The patient, aged 58 years, was unmarried and passed the menopause at the age of 52 years. Although the disease appeared to have been present for four years no lymphatic infiltration was found in the pelvis during the operation. Dr. Walter also showed a Uterus three and a half months pregnant, the entire anterior wall of which was occupied by an intramural fibroid. It was removed on account of anæmia and severe progressive pain. He did not advocate the induction of abortion in such cases, believing abdominal section with enucleation or hysterectomy to be preferable.—Dr. A. W. W. Lea (Manchester) read a paper on the Appendix Vermiformis as a Cause of Pelvic Inflammation, dealing with the literature of the subject and analysing ten cases operated on by himself. He advised that the appendix should always be examined during abdominal sections for pelvic disease and that it should be removed if "pelvic" in position, if pathological or adherent, or if near the stump of any removed organ. He had removed the appendix in such circumstances 35 times without any deleterious effect on the progress of the patients to recovery.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on Feb. 28th, Mr. W. B. Holderness, the President, being in the chair.—Mr. L. H. D. Hale showed an elderly man suffering from a large Tumour, presumably of the left kidney, with metastatic growths in different parts of the body. A spontaneous fracture of the humerus had taken place recently. There was marked hæmaturia.—Mr. J. O. Skevington showed a lad presenting a loud Systolic Murmur, audible all over the cardiac area. The boy's hands were blue and cold and the circulation appeared generally defective. The murmur was thought to be of congenital origin.—Mr. J. Howell Evans showed specimens of Tumours of the Mamma which were clinically malignant but which were by section and microscopic examination proved to be fibro-adenoma, chronic interstitial mastitis, and multiple cysts of the breast.—Mr. Evans also read a paper on Cranial Hæmorrhages which were produced by traumatism at birth. He said that his first object was to exonerate the medical man from any blame in the production of the vertical cephalhæmatomata neonatorum and to extend the allied and unavoidable intracranial lesions in explanation of many cases of spastic paralysis, diplegia, and epilepsy. He had proved that serious consequences resulted from trephining in young animals when they were about to attain the age of puberty and on this ground he warned his audience against the too ready acceptance of the principle recently advocated in many medical journals—namely, the employment of trephining in the intracranial lesions of the newly born based upon the very limited number (four) yet preponderatingly fatal cases set in view by Cushing. Drawings were shown illustrating the fœtal skull, its vascular supply, and its moulding during birth transit, together with the irregular mouldings dependent upon anatomical variations.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—A meeting of this society was held on March 9th, Dr. Woods, the President, being in the chair.—Mr. W. Stuart-Low showed a case with Greatly Enlarged Eustachian Cartilages which caused no nasal or pharyngeal obstruction. He also showed a case of Ulceration of the Auricular Lobule of 15 years' standing.—Mr. Mayo Collier showed a case of Syphilitic Disease of the Larynx. His object was to accentuate the fact that under ordinary syphilitic treatment the larynx did not heal. This case had come to him after having been under ordinary treatment for some months. He had immediately stopped the internal administration of medicine and had ordered calomel fumigation or inhalation every second day. The larynx had healed in three weeks.—Mr. Harold S. Barwell showed a case of Lupus of the Larynx and Palate.—Mr. W. J. Chichele Nourse exhibited two cases showing the Results of the Radical Mastoid Operation.—Dr. V. H. Wyatt Wingrave showed several Microscopical Specimens.

CHILDREN'S HOSPITAL, SEVENOAKS.—The claims of this hospital were strenuously advocated at a drawing-room meeting held at the house of Mrs. H. Lubbock, 28, Cadogan-gardens, last week. Sir William H. Broadbent wrote pointing out that an institution such as this is able by prolonged treatment to cure incipient cases of hip disease. Mr. J. Warrington Haward, chairman of the Invalid Children's Aid Association, and Mr. A. H. Tubby, honorary consulting surgeon, appealed to the London public for their interest and support in behalf of this hospital, which, though situated at Sevenoaks, is essentially a metropolitan institution. Of the 576 children treated there 322 came from London and 167 from other parts of the country and of the 67 cases treated during 1905 only two belonged to Sevenoaks. Increased expenditure will be involved by paying a nursing staff which has hitherto been worked on mutual terms.

Reviews and Notices of Books.

A Manual and Atlas of Orthopædic Surgery, including the History, Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment of Deformities. By JAMES K. YOUNG, M.D., Associate in Orthopædic Surgery, University of Pennsylvania; Professor of Orthopædic Surgery, Philadelphia Polyclinic; Clinical Professor of Orthopædic Surgery, Women's Medical College of Pennsylvania, &c. Illustrated with over 700 photographs and line drawings, mostly from original sources. London: Rebman, Limited. 1906. Pp. 942. Price £2 12*s.* 6*d.* net.

THERE is a very definite tendency for scientific books to increase in size. During the greater part of the nineteenth century the ordinary work on medical or surgical subjects was almost always issued in the form of an octavo volume, but during the last ten years there has been a very noticeable increase in the issue of scientific works in the quarto form and with this increase in size the weight is still more increased by the use of thick and heavy paper. The present volume is exquisitely printed and beautifully bound, but, alas, it weighs over eight pounds. This does not, perhaps, matter very much, as it must be intended chiefly for reference, but we should think it might have been possible to have brought out the work in a more portable form.

The boundaries of orthopædic surgery are ill-defined and subjects are admitted or excluded according to the choice of the writer. Deformities especially affecting the bones and joints seem to fall naturally within the scope of orthopædics. Dr. Young has exercised a wise discretion and no exception can be taken to the extent of the matters dealt with in this work. The history of the subject is given and is of interest, though the space allotted to it is hardly sufficient to do it justice. The illustrations of early orthopædic apparatus are instructive. The chapter devoted to the etiology of deformities is moderate in tone. When referring to "maternal impressions" the author hardly likes to deny the possibility of an emotion of the mother affecting the development of the child, but he thinks in general the effect is so slight as to be negligible. The references to the production of deformities by the arrest of development are too brief to be of much value. More useful is the account given of the causation of acquired deformities, and the author speaks in commendation of "Julian Wolff's law," though he admits that it is not wholly adequate. Dr. Young contrasts the forms of ancient statues with some of their modern representatives, and he shows clearly that this difference is related to a real difference between the human figure in the days of ancient Greece, when the body was loosely clothed, and the present time, when much deformity exists caused by corsets and tight clothing. To illustrate this difference he shows a torso of Venus from Naples and the Venus of Praxiteles, and he contrasts with these a modern French statue. We agree fully with his example and his deductions therefrom. Unfortunately, however, the title of the modern statue is given as "Prima Vera" of Botticelli. The "Prima Vera" of Botticelli is a well-known painting and cannot be called either modern or French, as the author appears to imagine it is. The statue which he gives is indeed modern and is the "Danseuse" of Falguière. We fear the titles and illustrations have become mixed; perhaps the author intended to show some figures of Botticelli but ultimately decided to omit them.

The chapter on General Prophylaxis and Treatment is full and good. In speaking of the mode of employment of the Riggoli osteoclast for correcting bow-leg in the tibia the author says that the "plunger" should be "applied over the inner surface so as to strike the point of greatest convexity." Surely the word "inner" should be "outer." Probably the best section in the book is that dealing with Hip-joint Disease. The only point to which we need refer is the statement that phimosis is a cause of hip disease and the author appears to consider this proved by quoting statistics as to the percentage of cases of disease of the hip-joint in which phimosis was present, without the faintest reference to the frequency of phimosis amongst boys generally. This omission, of course, renders absolutely valueless all the figures to which the author refers. We are glad to see a chapter on Non-tuberculous Disease of the Hip; in many works this is a subject much neglected. We may specially commend the description of the treatment of lateral curvature of the spine by exercises and mechanical movements.

The book is good; it is perhaps the most elaborate treatise on deformities and yet the author has in parts not devoted as much space as seems to us to have been needed for the discussion of the relative merits of the various operations. However, it is a worthy product of the American School of Orthopædics, which has done so much for this department of surgery.

Psychiatry: A Text-book for Students and Physicians. By STEWART PATON, M.D., Associate in Psychiatry, Johns Hopkins University; Director of the Laboratory, Sheppard and Enoch Pratt Hospital, Towson, Maryland. London and Philadelphia: J. B. Lippincott Company. 1905. Pp. 618. Price 18*s.* net.

THIS book presents the essentials of the latest teaching in the domain of psychological medicine. It is thoroughly modern, being based upon the views of authorities of the present day. The large number of references to the work of other investigators, both in the text and as footnotes to each chapter, shows the author to be well acquainted with the literature of his subject. A chapter on the nature of alienation serves to remind us how little we know of pathological processes as they affect the brain and of the relationship between the changes demonstrated therein and the clinical symptoms in cases of insanity. Dr. Paton thinks there can be little doubt that the changes found in the nerve cell in certain states of delirium and acute confusion and in terminal stages of the psychoses are the result of the action of toxins, but remarks that we know nothing of the source of these. Much is heard nowadays, but nothing is known, on the subject of auto-intoxication in relation to insanity. Some 100 pages are occupied in discussion and analysis of the disturbances in normal mental processes which constitute the symptoms of alienation. It may be objected that the citation of the unsupported and controversial views of this or that observer which is noticeable here is undesirable. Such speculations are the bane of psychological medicine and are commonly burdensome and unprofitable to the reader. A chapter such as this—on the genesis of morbid mental processes—is, it may be allowed, necessary in text-books on insanity but in view of the obscurity of the subject it should be as brief as possible. There is a useful chapter on the examination of patients; the commoner stigmata of degeneration are tabulated and the subject of the examination of the cerebro-spinal fluid finds due mention.

In his excellent remarks on treatment the author shows that no progress in psychological medicine can be expected until departments for mental cases are provided in the great centres of population in proximity to other clinical departments where the alienist can work in touch with other branches of medicine and under the stimulus afforded by the presence of students and with their help. To judge from Dr. Paton's remarks there is as much room for development in this direction in the United States as in this country. Further, he describes

the majority of institutions in the former as poorly equipped for dealing with incipient and curable cases of insanity. Due importance is attached by the author to the rest cure, hydrotherapy, massage, and gymnastic exercises. We wonder how many asylums in this country have facilities for such treatment or possess the necessary corps of properly trained attendants which Dr. Paton rightly considers essential in every institution worthy to be called a hospital. With the average employés of a public asylum and in the proportion of 1 to 10 patients adequate individual treatment cannot be expected. The author thinks that electro-therapy is not of great value in mental diseases. In a chapter on psychiatrical hospitals the subject of the treatment of acute and curable cases is further elaborated. The plan of such a hospital is outlined and its location, equipment, staff, and organisation are dealt with. This problem, as Dr. Paton observes, has not received much attention in English-speaking countries.

With regard to the classification of mental disorders, it will be a relief to many to find that the usual table is conspicuous by its absence. The author devotes a chapter to each of the provisional groups under which he considers disorders of the mind. In this way he deals with the anomalies of development, the manic-depressive group, the group of dementia præcox, of the intoxication psychoses, and so on. Idiocy, imbecility, and the lesser degrees of defect are treated in a practical way from the standpoint of a general mental level and educational possibilities and not upon the somewhat fantastic lines of the older writers who were wont to classify these states upon the basis of certain gross clinical and pathological differences, which method was not helpful. The so-called "moral insanity" is referred to, and we think properly so, under the defective states. Dr. Paton considers that in Germany alone at the present time is any attempt being made to remove defective children from public schools to suitable institutions. The delirium of fever, acute delirium, and the confusional states are grouped as "psychoses probably in part the result of auto-intoxication." Perhaps the plain title "states of delirium and confusion" would be better pending further information as to their pathology. The insanities associated with alcohol, cocaine, morphine, and other drugs form the group of chronic intoxication psychoses.

The manic-depressive group of psychoses is dealt with on orthodox modern lines but the author would for the present refrain from regarding this and the dementia præcox group as definite disease entities. The expression "psychic hallucination" is used and presumably therefore the author adopts Baillarger's division of hallucinations into psychic and psycho-sensorial. We do not think such a division can be made for reasons referred to by Dr. Paton himself on p. 59; it appears artificial and likely unnecessarily to increase the difficulties of the student. The heredity of insanity in manic-depressive cases is stated to be as high as from 80 to 90 per cent. The leucocytosis found in maniacal conditions is, according to a writer quoted, apparently a *result* of psychomotor activity. This view will hardly commend itself to those who contend that the leucocytes have a defensive rôle, even in disorders of mind. Dementia præcox is dealt with on the lines of Kraepelin's teaching.

As regards the relationship of syphilis and general paralysis, it is pointed out that whilst in the great majority of cases syphilis is an important etiological factor it is impossible to substantiate the view that all other factors are of secondary importance. It is shown that there is an enormous difference in the figures of different writers relating to the percentage occurrence of syphilis. The pathological anatomy of paralytic dementia is well described and the chapter on this subject ends with a useful *résumé* of the changes which may be regarded as specific of the disease. Dr. Paton is of opinion that a consideration of all the facts appears to justify the view that the disease consists in a diffuse toxic process affecting nearly all the organs but especially the nervous system. Chapters follow on the epilepsy group, the hysteria group, and the neurasthenic and psychasthenic states. Writers who employ the term "psychasthenia" appear to designate thereby a condition in which obsessions, impulses, and the various "phobias" exist in conjunction with ordinary neurasthenia. The term appears to be one of those unscientific, mystical designations which are so precious to the invalid with "nerves" and which not infrequently succeed in hypnotising the medical men who habitually employ them. The closing chapters of the book deal with the psychoses associated with organic disease of the central nervous system (amongst which we note particularly those due to arterio-sclerosis as instructive) and with the senile psychoses.

The work is illustrated by several good charts, drawings, and photo-micrographs. It may be recommended as a trustworthy guide.

Lectures on Tropical Diseases, being the Lane Lectures for 1905. Delivered at Cooper Medical College, San Francisco, August, 1905. By Sir PATRICK MANSON, K.C.M.G., F.R.S. Illustrated. London: Archibald Constable and Co., Limited. 1905. Pp. 230. Price 7*s.* 6*d.* net.

IN the selection of tropical ailments presented for consideration to the medical men of San Francisco Sir Patrick Manson showed wisdom. The "East," as we know it, has been brought much nearer to the Pacific seaboard of the United States within recent years and it follows that with the opening up of commerce the towns on the American coasts are exposed to the diseases which belong more specifically to the tropics. San Francisco is the largest shipping port on the Pacific coast of the United States and commands a large shipping trade with Japan, China, and the islands of the Archipelago. It is fitting therefore that these lectures should have been delivered in San Francisco and it is expedient also that in this city a tropical medical school should be established. The subjects selected by Sir Patrick Manson were many of them of direct bearing upon the public health of the United States, whilst others were illustrative of the great progress made in tropical medicine during late years and indicative of the lines along which thought and practical investigation must travel if further advance is to be made.

The principal diseases dealt with in these lectures were epiphytic diseases of the skin, ankylostomiasis (or uncinariasis as the disease is styled in the United States), Guinea-worm disease (dracontiasis), bilharziosis, filariasis, malaria, trypanosomiasis and sleeping sickness, febrile tropical splenomegaly (kala-azar), and the intestinal fluxes, including dysentery and sprue. Two chapters are devoted to the diagnosis of tropical fevers, under which heading we find discussed, in addition to the above, such ailments as Mediterranean fever, abscess of the liver, relapsing fever, and leprotic fever. Treatment is dealt with in the ninth chapter, and the last, the tenth chapter, is devoted to Problems in Tropical Medicine. The lectures afford abundance of attractive reading to both those acquainted and those unacquainted with tropical diseases. The medical man unacquainted with this special branch of medicine will find a consecutive, easily followed, and readily understood exposition of the subject in a manner at once educative and attractive. The medical man already versed in tropical ailments will in all probability turn to the last chapter in preference to any other and there, under the problems awaiting solution, he will find much to stimulate and to encourage him.

Sir Patrick Manson draws attention to the danger of the diffusion of yellow fever when the Panama Canal is completed and advises "a scrupulously administered quarantine"

as a means of combating the spread of the stegomyia mosquito. As a working hypothesis towards explaining the immunity from yellow fever enjoyed by creoles and others Sir Patrick Manson suggested "that there are two strains of yellow fever virus, one of great virulence, one of little virulence. Specifically the same, they are mutually protective." The relation between these strains resembles the bearing of small-pox towards vaccinia, the native in the area in which yellow fever is endemic acquiring his immunity against the virulent disease from having had the non-virulent disease already.

The effective means of combating disease in the tropics require that medical men, before engaging in the practice of medicine in these regions, should be trained in tropical medicine; that the elements of tropical hygiene should be taught in native schools; and that all Government officials in warm climates should understand the part played by insects in the spread of tropical diseases. These Lane Lectures on Tropical Diseases afford an exposition of applied science in language understandable by all and as a record of scientific discovery are remarkable for their accuracy, their comprehensiveness, and their thoughtful suggestiveness.

The Thyroid and Parathyroid Glands. By HUBERT RICHARDSON, M.D., late Pathologist to Mount Hope Retreat; Pathologist to Maryland Asylum and Training School for Feeble-minded Children. Illustrated. Philadelphia: P. Blakiston's Son and Co. 1905. Pp. 261. Price $3.00.

IN this volume Dr. Richardson gives an excellent *résumé* of the work which has been accomplished on the thyroid and parathyroid glands within the last 10 or 15 years. He has also recorded some valuable observations which he himself has made on the subject. His experience amongst the insane and degenerates whilst pathologist at Mount Hope Retreat afforded him ample opportunity for research. That portion of the book, therefore, dealing with cretinism and myxœdematous infantilism will be found particularly interesting.

Attention is first drawn to the terms "myxœdema," "cretinism," and "infantilism." The conditions known under these names have one etiological lesion common to all—viz., the loss of function of the thyroid gland, the differences between them being due to the age at which the disease occurs and the degree of power of function which is lost. A good description is given of endemic and sporadic cretinism. Dr. Richardson arrives at the conclusion that the etiology of sporadic cretinism is by no means definitely settled. He thinks that a certain number of cases may be due to the "morphological absence" of the thyroid gland but also rightly states that such a *lusus naturæ* must be very rare. He believes that in the majority of cases of sporadic cretinism the disease of the thyroid gland can be traced to some acute post-natal infection which, by producing a thyroiditis, arrests the development or partially destroys the gland. It is by no means uncommon to obtain a history from the parents that the child developed normally both mentally and physically until some illness was contracted and then a few months afterwards the child ceased to grow and symptoms of cretinism appeared. Dr. Richardson points out that the older the child is at the time of the arrest of the function of the thyroid the more incomplete are the symptoms and the more difficult is it to trace their true cause. An instructive and vivid description is given of the appearances presented by patients affected with cretinism and some interesting photographs are reproduced of patients before and after the adoption of thyroid feeding as a means of treatment.

The chapter on Myxœdematous Infantilism is well worthy of study. The definition is adopted that myxœdematous infantilism is an anomaly of development characterised by the persistence after puberty of the morphological characters of childhood, the arrest of the physical development being often accompanied by a general mental deficiency corresponding to the physical retardation. The symptoms of this condition are well described and reproductions of photographs are given to show the beneficial effects of treatment. Especial attention is drawn to infantilism of the "type Loraine," which has been described by various observers as a particular form of arrested development differing from myxœdematous infantilism in many points. It appears to be due to congenital non-development of the arteries, sometimes combined with thyroid insufficiency.

Another condition mentioned, and about which apparently not much is known, is anangioplasia, or the congenital diminution of the lumen of the larger arteries. It is considered by some authors to be a separate form of infantilism. It has also been found associated with the lymphatic constitution in many cases of so-called idiopathic epilepsy described by Ohlmacher. As Dr. Richardson very properly observes, however, other organs besides the thyroid may be implicated in causing infantilism. Imperfect action of almost any organ of the body can be conceived as arresting development, either physical or mental. This arrest has been described as occurring in disease of the abdominal organs, such as the liver and the pancreas, and especially that condition of lymphatic hypertrophy known as "status lymphaticus," in which the lymphatic tissues all over the body are enlarged, particularly the mesenteric and internal glands, a persistent thymus being also generally present. Dr. Richardson, however, suggests that the close association of the thyroid with the physical and mental development, as shown in cretinism and myxœdema, points to its being a probable primary cause in the majority of these cases, the lesions of the other organs being secondary to the general want of nutrition.

Dr. Platauf described a disease under the name of ateleiosis (ἀτελείωσις, not arriving at perfection), and Dr. Hastings Gifford has described some half dozen cases to which full reference is made in this volume. It will thus be seen that much interesting information is to be found in Dr. Richardson's work and we can cordially recommend a perusal of it to all those who are interested in a subject which has only recently attracted well-merited attention.

LIBRARY TABLE.

On Professional Education, with Special Reference to Medicine. By T. CLIFFORD ALLBUTT, M.A., M.D. Cantab., F.R.S., Regius Professor of Physic in the University of Cambridge. London: Macmillan and Co. 1906. Pp. 80. Price 2*s.* net.—Many who heard this admirable address when it was delivered at the opening of the winter session last October at King's College, London, will be glad that the author has published in book form the whole of his manuscript. Careful comparison will show that it is longer than the report which was published in THE LANCET of Oct. 14th, 1905, and upon which we had pleasure in commenting fully. It is, however, difficult to indicate in what respects the manuscript differs from the original address, since, apart from the footnotes which are obviously later additions, the text runs with the fluency and consecutiveness which were such pleasant features of the first report. Having so recently reviewed the main features of this book it is unnecessary to repeat our appreciation of the arguments which Professor Allbutt adduces or of the style in which they are presented. It must suffice to say that in book form the address will be valued by those who were present when it was delivered, while it will certainly attract many other readers interested in medical education in the metropolis and in the thoughtful and scholarly diction of its author.

A German-English Dictionary of Terms used in Medicine and the Allied Sciences. By the late HUGO LANG, B.A. Edited and completed by BERTRAM L. ABRAHAMS, M.B., B.Sc. Lond. London: J. and A. Churchill. 1905. Pp. 598. Price 15*s.* net.—To review a dictionary is a task of herculean proportion, a task which must, however, be child's play when compared with the dread monotomy of its compilation. In the present volume it is impossible to gauge the amount contributed by the two authors whose names appear upon the title-page; we can only speak of the result and we must borrow an appropriate term from Dominie Sampson and exclaim "Prodigious!" and there is a strong temptation to let that remark stand for all criticism. This would, however, be scarcely just to the amount of trouble that the authors have expended, an amount that may be realised when it is stated that each page has two columns and that the entries have, with few exceptions, no more than a single line devoted to each and in this line the genders and the parts of speech are indicated in addition to the English equivalent. It may be wondered, therefore, how the numerous pages have been filled and the answer is to be found in the extreme liberality with which the authors have introduced terms which are practically identical in the two languages for which no dictionary is ever likely to be consulted—e.g., objektiv, objektiv-glas, obsolet, passiv, paste, and pathologie; perhaps a very conscientious student might deem it necessary to look out such terms in a dictionary, but we are thankful not to have met him in the flesh. The inclusion of such terms might be defended by the desire to include all terms used in medicine and it is doubtless a fault, if it be a fault, on the right side. It is undoubtedly better to give too much than too little. To a great extent the length of the book is due to the peculiar character of the German language with its tendency to develop new words by linking together, with or without a hyphen, two or more familiar words and then letting the new compound have all the dignity of a new technical term. The simple word "nagel" is thus here amplified into two columns, while "nasen" runs into nearly five columns. These illustrations suffice to show the painstaking research which has contributed to the compilation of this dictionary which is certain to be consulted frequently. We have tested its pages in many places and have found all the information that could be desired in a dictionary. As the editor asks to be informed of any inaccuracies or omissions, we venture to refer him to the last line on p. 490, where he will find a German term rendered into French instead of English.

The Writers' and Artists' Year-Book, 1906. London: Adam and Charles Black.—This little book, the new form of the well-known Writers' Year-book, forms a directory for all writers, illustrators, and photographers who want to find the medium most suited to their style and wares. Such is the multiplicity of papers, journals, magazines, and reviews now emanating from the press that even experienced writers may be glad of the systematic information placed before them in this useful *vade mecum*. The inexperienced author, the writer, or the artist who is still looking for his market should certainly consult its pages and so avoid much disappointment.

JOURNALS AND MAGAZINES.

The Edinburgh Medical Journal.—The March number opens with a clinical lecture by Dr. W. Allan Jamieson on the Treatment of Eczema, which contains some useful advice for the management of this troublesome affection, a preliminary poulticing with starch and boric acid being especially commended. Mr. George G. Hamilton deals with Wiring of the Patella by the open method and Dr. Arthur J. Hall with Bromide and Iodide Eruptions. An abstract of the Morison lectures (1906) by Dr. W. Ford Robertson sets forth the interesting views which he has been led to formulate as to the causation of general paralysis. Abstracts of these lectures were, as our readers will remember, published in THE LANCET of Feb. 3rd (p. 324) and 10th (p. 396) last.

The Scottish Medical and Surgical Journal.—The important paper by Dr. Francis D. Boyd and Mr. Jean Robertson on the value of Rectal Alimentation, published in the March number of this magazine, deserves careful study by all clinicians; it tends to upset established views as to absorption from the rectum, experiment showing that proteids are less well absorbed than carbohydrates and fats, and also emphasises the unsatisfactory character of this mode of feeding both in respect of the amount of sustenance afforded to the patient and as to the supposed rest gained by the stomach. Mr. George L. Chiene writes of the use of stovaïne as an anæsthetic and records some good results from spinal anæsthesia with this drug. An abstract of the Morison lectures appears in this journal also.

The Dublin Journal of Medical Science.—Dr. Alfred R. Parsons records in the February number a case of perforated gastric ulcer successfully operated upon and urges the necessity of the earliest possible operative interference in these cases. A Thesis for the degree of M.D. by Dr. T. C. A. Sweetnam speaks in very enthusiastic terms of oxalate of cerium as a remedy for vomiting due to gastric conditions, including carcinoma, and suggests that the drug may owe some of its efficiency to radio-activity.

Annals of Ophthalmology. Vol. XIV., No. 4. October, 1905. JAMES MOORES BALL, M.D., Managing Editor. Pp. 147. Price 18*s.* a year.—This number contains: 1. An article on the Eye-strain Origin of Epilepsy, by George M. Gould, M.D., of Philadelphia, in which the author, whilst admitting the incurability of well-marked cases of epilepsy, especially when of long standing, considers that he is able to adduce evidence that where defects of refraction exist, the employment of appropriate correcting glasses effects marked improvement in the frequency and violence of the attacks. 2. The Treatment of Convergent Squint in Young Children, by Linn Emerson, M.D., of Orange, New Jersey. The author believes that no child is too young to begin treatment or to wear glasses. He gives full correction in the fixing eye and + 0·50 D. less than the full correction in the squinting eye. He uses atropine and occlusion of the fixing eye, trains the fusion sense, and, if requisite, performs tenotomy or advancement of the tendon of the muscle at fault in one or both eyes. 3. The Surgical Treatment of Ptosis, by J. J. Thompson, M.D., of New York. 4. Operation for Sympathetic Soft Cataract, with Remarks on Sympathetic Ophthalmia, by Professor Dr. J. Hirschberg of Berlin. This is a history of fairly successful operative treatment in a very unpromising case. 5. Clinical and Histological Report of a Case of Glioma Retinæ, by Frederick Krauss, M.D., of Philadelphia, and Harold G. Goldberg, M.D., of Philadelphia. 6. The Pathogenesis of Spasmus Nutans by Dr. A. Schafringer, translated from the German by Clarence Loeb, M.D., of St. Louis. 7. Excision of the Superior Cervical Ganglion in Inflammatory Glaucoma, by Matthias Lanckton Foster, M.D., of New York. This is the record of an unsuccessful result of this serious operation. 8. Operation for the Relief of Cicatricial Orbit, by James Moores Ball, M.D., of St. Louis. In this operation a portion of skin of crescentic form is isolated and by undermining the lower lid is pushed through it and attached to the margins of a horizontal cut at the bottom of the shallow orbit. This number contains many abstracts from foreign journals and also the index and table of contents of the fourteenth volume of the Annals.

THE LANCET.

LONDON: SATURDAY, MARCH 24, 1906.

Abiogenesis and Heterogenesis.

It is one of the chief characteristics of science, and not the least of its glories, that it is progressive. This is true alike of abstract scientific philosophy as of applied science and of necessity it leads to an examination and a re-examination from time to time of dogmas which may have come to be regarded as the fundamental axioms upon which the whole superstructure of a given department of scientific knowledge has been erected. Within recent years we have seen some of our most firmly established conceptions in the realm of physical science rudely shaken, or at any rate modified, by discoveries in various forms of wave motion, notably the Roentgen rays and the radium emanations. In his interesting address on medicine delivered before the British Medical Association at Leicester in 1905, Dr. H. MAUDSLEY suggested that he would serve a useful purpose who would constitute himself an *advocatus diaboli* and critically examine many apparently well-established truths. The pendulum-swing of scientific orthodoxy was well expressed by ROBERT BROWNING, who wrote[1]: "A philosopher's life is spent in discovering that of the half-dozen truths he knew when a child, such an one is a lie, as the world states it in set terms; and then, after a weary lapse of years and plenty of hard thinking it becomes a truth again after all, as he happens to newly consider it and view it in a different relation with the others." Few problems have exercised the mind of thoughtful man from time immemorial till the present more than that of the origin of life. The cause of those fundamental manifestations of life, those changes and adaptations to environment which distinguish the living from the inanimate and which we collectively label vital phenomena, affords an ever-present matter for speculation and its very elusiveness constitutes one of its greatest fascinations. The onward march of physiological inquiry has afforded much valuable information about the manner of many vital processes but none as to their origin, and the most our schools of philosophy have been able to evolve are the alternative speculative hypotheses—animistic and materialistic—which have proved neither fruitful nor satisfying. That the ultimate origin of life on the cooling surface of this globe in the "remote geological past" involves the conception of abiogenesis or archebiosis—that is, the generation of the living from the non-living—is obvious, but the theory of the biogenetic sequence of the successive generations of living organisms summed up in the well-known generalisation, *omne vivum ex vivo*, propounded two and a half centuries ago by the Florentine physician, philosopher, and poet, FRANCESCO REDI, though frequently assailed, has seemed to gain greater stability from each successive assault. The hypothesis of abiogenesis or "spontaneous generation" is of great antiquity. ARISTOTLE certainly believed in the spontaneous origination of eels and various other animals. The classical legend of DEUCALION and PYRRHA sung by OVID will be familiar to our readers, while LUCRETIUS and VIRGIL both refer to examples. The opinions of ARISTOTLE were apparently unchallenged until the experiments of REDI disproved many supposed instances of the kind, and the biogenetic or homogenetic hypothesis propounded by him was firmly established by VAN LEEUWENHOEK. Towards the end of the eighteenth century, however, the occurrence of abiogenesis was warmly upheld by NEEDHAM and BUFFON, but their experiments and conclusions were controverted by the Abbé SPALLANZANI. In the nineteenth century we find abiogenesis once more affirmed by various biologists of repute, including LAMARCK, BURDACH, PINEAU, POUCHET, MANTEGAZZA, HAECKEL, and CHARLTON BASTIAN, and vigorously opposed by SCHULTZE and SCHWANN, and later by TYNDALL, HUXLEY, PASTEUR, and HERBERT SPENCER, till in the "seventies" it seemed to have been incontrovertibly established that the processes of reproduction of all living things were solely homogenetic.

Dr. H. CHARLTON BASTIAN, whose interesting book on "The Beginnings of Life," published in 1872, summarised all the arguments in favour of abiogenesis, or archebiosis as he prefers to call it, has of recent years again attacked the question experimentally and with it the cognate though distinct subject of heterogenesis or xenogenesis. The distinction may best be given in his own words. "In archebiosis we are concerned with the actual origin of living matter, while in heterogenesis we have to do with the transformation of already existing living matter and a consequent new birth of alien living things."[2] The two hypotheses, though related, are obviously distinct and indeed it is possible to accept one while rejecting the other. Dr. BASTIAN has always been a stalwart champion of the former and within recent years has devoted himself more especially to the study of heterogenesis, some reputed examples of which he brought forward at a specially convened meeting at the Medical Society's rooms on March 15th, in a paper which was published in THE LANCET of March 17th. The examples referred to by Dr. BASTIAN comprised, first, the supposed *de novo* origin of bacteria in the protoplasm of animal or vegetable cells, which under healthy conditions are supposed to be germ-free. He has found micro-organisms which he regards as originating heterogenetically in the cells of a potato kept antiseptically for some weeks, the outer layers of which had been soaked in a strong solution of formalin. In like manner he has observed the appearance of organisms in the setæ attached to the abdominal appendages of cyclops—first, as minute motionless specks, subsequently developing into motile bacilli. Dr. BASTIAN discusses the possibilities of latent germs or infection by organisms and rejects them. A second and more direct illustration of supposed hetero-genesis brought forward by Dr. BASTIAN was the transformation of small masses of zooglœa on the surface

[1] A Soul's Tragedy, Act II.

[2] The Nature and Origin of Living Matter, 1905, p. 160.

of a specially prepared hay infusion into flagellate monads, amœbæ, or brown fungus germs, the former usually appearing during the first three to five days and the fungus germs from the fifth to the tenth day. Again, Dr. BASTIAN considers and regards as untenable the suggestion that these appearances may be due to infection. The third and most striking example offered in illustration of heterogenesis was the apparent development from the eggs of hydatina, the largest of the rotifers, of a ciliated infusorian belonging to the genus otostoma when the eggs were kept in the dark and in a comparatively airless condition. The obvious source of fallacy that ova of otostoma were mixed with those of hydatina Dr. BASTIAN has considered but brings forward evidence against such an explanation of his observations. Many other examples of similar transformations are recorded and figured by Dr. BASTIAN in his work on "The Nature and Origin of Living Matter," where he summarises his conclusions by affirming "that bacteria of different kinds, torulæ and moulds, may, and undoubtedly do, arise '*de novo*' by heterogenesis; that various simple Algæ, Diatoms, and Phytozoa may take their origin from alien sources; and that a similar heterogenetic origin is most frequently met with for Amœbæ, Actinophrys, Flagellate Monads, Peranemata, and even Ciliated Infusoria."

We do not propose now to offer any criticism of these conclusions or of the equally startling and heterodox claims of Mr. J. B. BURKE in regard to his "radiobes" or particles produced by the influence of radium on sterilised beef gelatin, claims which, by the way, Dr. BASTIAN himself criticises very adversely. It may be admitted that from the purely speculative or philosophical standpoint there is much to be said in favour of the occurrence of archebiosis, and even of heterogenesis, but the ultimate test must of necessity be that of experiment and without a repetition, with due attention to possible sources of fallacy, by independent observers of those already recorded no adequate criticism is possible. But certainly nothing is more inimical to progress than the blind and unquestioning acceptance of the results of preconceived ideas, no matter upon how firmly established a basis they may apparently rest. Dr. BASTIAN'S conclusions are undoubtedly of sufficient importance to warrant their careful consideration and critical examination by competent biologists and we shall await further information with interest, for it is obvious that if the *de novo* origin of bacteria be once established the conditions conducing to that origin and to the development of pathogenic properties by such organisms will become questions of vital importance in the study of bacteriology.

The General Medical Council: the Approaching Election of Direct Representatives.

ALTHOUGH some six months will elapse before the medical practitioners of Great Britain will be called upon to choose their Direct Representatives in the General Medical Council, we already have evidence of preparations for the coming event. We published recently a letter from Dr. WILLIAM BRUCE, who on four successive occasions has been returned to the Council by the practitioners of Scotland, and a letter from Mr. GEORGE JACKSON, one of the Direct Representatives for England, both writers soliciting a continuance of the confidence which has been reposed in them, for each letter constitutes what amounts to an electoral address. It therefore becomes interesting to examine these letters in some detail and to see how far they can be said to present any statesmanlike grasp either of the questions which the Council is bound by its constitution to consider, or of those, covering a much larger area, which have been pressed upon its attention from without. It is by no means impossible that a new Government and a new House of Commons may display an appetite for domestic legislation, perhaps extending even to medical matters, and that hence the near future may afford to medical reformers opportunities of which they should be fully prepared to avail themselves.

Dr. BRUCE'S programme for the future contains as its main elements a rearrangement of the curriculum of medical study and of the present methods of examination, provision for an "adequate" increase in the number of the Direct Representatives of the profession, and, most important of all, a desire "to secure for the profession its just place in the country." Mr. JACKSON almost confines himself to a discussion of the position, as regards their tenure of office, of medical and sanitary officials and of the condition of Poor-law medical officers in Ireland. It is impossible to deny that these questions of detail are worthy of serious consideration; but, even when taken collectively, they can hardly be said to exhaust the legitimate demands and aspirations of the medical profession. Those demands and aspirations are compendiously stated in the sentence which we have quoted from Dr. BRUCE; and our efforts should, we think, be steadily directed towards the attainment of a position in which medical practitioners would be recognised as the proper and only trustworthy guides upon all questions, whether legislative, administrative, or merely social, which have important bearings upon the public health or upon the general physical welfare of the community. The efforts of the General Medical Council should be directed towards the task of so concentrating and focussing those of the profession itself as to secure to knowledge its rightful dominion over ignorance and superstition. If this is ever to be done it must be by means which will bring home to the perceptions of the public the fact that medical education is not only a highly specialised superstructure, but also that it is a superstructure which can only be raised upon a broad, a deeply laid, and a secure foundation. We lately published a letter from Dr. W. CECIL BOSANQUET in which he said that the aim of medical education was "simply to endow the future practitioner with the knowledge requisite to enable him to treat sick persons in the best possible manner."[1] The statement should be so enlarged as to include the prevention of disease as well as the treatment of the sick, and also to include the necessity of rendering the effectual character of the "endowment" fully manifest to the public, a point upon which we have frequently insisted in these columns.

[1] THE LANCET, Feb. 10th, 1906, p. 400.

The highest type of professional education now known in England is that given to officers of the Royal Navy, whose lives from boyhood are moulded to the requirements of their future calling; and nothing in the same direction could be too thorough or too complete for the needs of what may be collectively described as the sanitary service of the country. The respective results of medical and of naval education are that no landsman disputes about nautical matters with a sailor; while every blockhead, whether in his privately wooden capacity, or on a board of guardians, or as a local "authority" (not to speak of more august assemblies), is ready to maintain his ignorance against the knowledge of a physician. This attitude may have had some legitimate ground a hundred and fifty years ago, and earlier, but the lapse of one and a half centuries has failed to increase the enlightenment of the public. The House of Commons, when the registration of the medical profession was on the tapis, did all that was in its power to protect those whom it described as "unqualified practitioners," and an amendment hostile to them found no seconder; while other instances no less striking could be found of the wide-spread belief among the laity that medical education is of no importance. This is the position which has to be got over. The medical profession in this country will never occupy its fitting place until presumptuous ignorance, even in high places, as to medical affairs, is treated with the scorn and contempt which are its due, and all reform of the General Medical Council should be directed towards enabling it better to set forth the claims of medical knowledge.

The history of the creation of the General Medical Council has its bearing upon all questions of reform. The Council was established by a Parliament entirely out of sympathy with the medical profession and with a view to two main objects, the first of which was to throw open English practice to the holders of Scotch and Irish qualifications, and the second to prevent a competition for the issue of licences which might have had an injurious effect upon their value. A third object was to enable the public to distinguish qualified from unqualified practitioners, some have cynically supposed so that members of the public might be enabled to resort to the latter if they thought fit. The qualifying bodies were represented in the Council chiefly as checks upon one another, while the Crown was represented as a protection to the public against them all. This arrangement worked fairly well until the profession began to look to the Council for action in many questions of general interest, when it was pleaded that the limits of the Council's duties had been reached. A demand for direct representation was set on foot and was to a small extent successful. Partly under the influence of the Direct Representatives the Council has gradually felt its way to some enlargement of its sphere of action, and it is evidently expected, at least by Dr. BRUCE, that an increase in the number of Direct Representatives would lead to fresh developments of useful activity. We agree with him that this may be so, but he hardly realises the difficulties which surround the practical carrying out of his proposal. He desires that the increase in the number of Direct Representatives should be "adequate," but does not commit himself to saying what he means by adequate. By the recent increase in the number of corporation representatives the Council is becoming a somewhat unwieldy body, at once too small and too costly for the full discussion of many of the questions with which it deals and too large and too verbose for prompt and effective administration. We have still to discover the *juste milieu* as regards numbers and there is much room for diversities of view as regards composition, diversities of view resting mainly upon different conceptions of function. At present the Council may be said to contain three elements—the Crown Representatives, intended to protect the public; the Corporation Representatives, intended to protect the corporations; and the Direct Representatives, intended to protect the profession. Of these three the Corporation Representatives outnumber, and consequently can outvote, an alliance of the other two, so that in order to obtain the acceptance of any measure of reform it is necessary not only to convince the Corporation Representatives that it is desirable in the abstract but also that it would not be injurious to the bodies from which their own powers are derived. A Council seen to be thus constituted might well be expected not to go much beyond an expression of pious opinions, and it is greatly to the credit of the Council that it continues to get through masses of good work for which its shape is not fitted. Dr. BRUCE will urge upon it the desirability of asking the Privy Council to sanction the election of three more Direct Representatives (the largest increase for which the Act of 1886 provides) and will appeal to the Privy Council itself if his motion should be lost. Three new members, if elected, would not alter the existing balance of power and would leave things very much as they are at present. We should much prefer to see the energies of reformers directed towards the attainment of a legislative reconstruction of the Council itself, a reconstruction dictated by a reconsideration of the work which it may justly be required to do—an interesting subject to which we shall recur.

The Report on Vagrancy.

THE members of the departmental committee appointed by the late President of the Local Government Board to inquire into the question of vagrancy are to be congratulated on the report which they have made on the subject.[1] Within a comparatively small compass and in readable form they have compressed a mass of useful information, gathered from many sources, regarding the causes of vagrancy, the habits and life-history of the vagrant, and the attempts which at different times and in different states of society have been made for his repression. In these days we may search in vain for "jovial beggars" or other irresponsible wanderers who excite our sympathies in romance. The modern vagrant is not an outlaw, defying social order and civilisation, as was often the case under the repressive laws of past times. He is almost wholly dependent on social organisations for the relief of the poor and necessitous. Without the casual ward, the prison (which he often deliberately enters in preference to the casual ward), the philanthropic shelter, the free meals, the hospital, and like accessories the habitual vagrant could not exist. In

[1] London, Wyman and Sons, Fetter lane; Edinburgh, Oliver and Boyd; and Dublin, E. Ponsonby. Cd. 2852. Price 1s. 6d.

London there is a special class of tramps who practically live all the year round in the 28 metropolitan casual wards. The vagrant's choice is a large one and naturally falls mainly on casual wards such as those of Poplar where detention and work are not enforced or where only a light task is given. In country casual wards the story is much the same. The committee finds that the vagrant "on the road" is very seldom the *bonâ-fide* working man travelling in search of employment, though many are men who will undertake casual labour for a short time but object to, or are unfit for, any continuous work. These are among the first to lose employment on any falling off in trade and the last to be employed when conditions improve. Such men sooner or later join the ranks of the "habitual" vagrant, the man who may professedly be in search of work but who certainly has no desire to find it. It is these "habituals" "who swarm to any place where new public charity is started; they are the first to avail themselves of free shelters or free meals and to a large extent oust the genuine unemployed from the benefits intended for them." The majority of vagrants are in the able-bodied period of life, the number of children or young adults among them being very small. The committee finds that the statement frequently made that tramps "breed tramps" has not much foundation in fact. It points out also that vagrants as met with in casual wards as a whole are not an ill-fed class. Their bodies as a rule are well nourished, they are now better clad than they used to be, and as a rule their boots are sound. In London and the larger towns, however, there is a very large class of habitual vagrant or loafer who has become almost hopelessly degenerate, physically as well as mentally. They are people who will readily adapt themselves to the very lowest and barest standard of living that is available, so long as they can thereby escape the necessity of exerting themselves. Striking examples of this fatal form of contentment—made possible by free shelters and other mistaken forms of philanthropy—were given to the committee by Sir SHIRLEY F. MURPHY and others.

The committee appears to have been convinced that vagrancy is on the increase and that no alteration of the present Poor-law arrangements will materially improve matters. It recommends that casual wards should be reduced in number, taken out of the control of boards of guardians, and handed over to the police whom they consider should be the responsible authority for dealing with vagrants throughout the country. It makes an exception, however, in the case of women and child vagrants who should be received in workhouses and not in casual wards. It recommends a system of "way tickets," to be issued by the police to persons in *bonâ-fide* search of work, entitling the holder to lodging facilities and food subject to certain conditions so long as he follows a prescribed route. As regards minor vagrancy offences, the committee recommends that where a nominal sentence of one day's imprisonment does not meet the case the minimum period should be 14 days, a proceeding which might be followed with advantage in the case of other offences besides those connected with vagrancy. Further, it recommends certified "labour colonies" to which habitual vagrants could be committed for detention for not less than three months or more than three years. These "colonies" are not advocated with much hope of reclaiming a large proportion of their inmates from habits of vagrancy, cadging, and loafing; the committee realises that, as has been found in Belgium and elsewhere, the majority of persons in such colonies on discharge may be expected to revert to their former life. But they will at least be kept off the road and in some sort of useful occupation. Great stress is rightly laid on the need for economy in the construction and organisation of these colonies. Elaborate buildings will not be necessary and by suitable arrangements of the labour, according to the circumstances of each colony, their cost to the public need be only small, especially when allowance is made for the heavy expense entailed by the present casual ward and prison system. The dietary at such colonies should be on the minimum scale of cost consistent with providing sufficient nutriment; the committee, which in this matter has had the aid of Sir MICHAEL FOSTER, Dr. F. G. HOPKINS, and Dr. A. H. DOWNES, recommends dietaries which it considers would serve the purpose at no greater expenditure than 1*s.* 6*d.* per head per week. This conclusion is reached by taking account of recent investigations which suggest that generally accepted dietaries for prisons and other institutions have comprised an unnecessary quantity of proteid. The minutes of evidence and appendices when published should give useful information on this important question. The difficulties to be surmounted in the initiation and successful management of a labour colony—judgment of the fitness of individuals for particular work, accessory treatment for "degeneracy" and disease, considerations of diet, and the like—all suggest that in most cases the best managers or superintendents of these institutions would be men who combine medical knowledge with administrative experience.

The committee devotes a chapter of its report to the part played by the vagrant in disseminating infectious disease and refers in detail to Dr. H. E. ARMSTRONG'S work on the subject of vagrancy and small-pox. It will be remembered that Dr. ARMSTRONG'S inquiries into this subject during the period when small-pox was prevalent throughout the country in 1894, and again in 1904, were in each case followed by a conference of sanitary authorities and others interested. The second conference, convened by the London County Council, passed a series of recommendations to which we referred in an article in THE LANCET of Nov. 19th, 1904 (p. 1431). These recommendations were placed before the committee by Dr. ARMSTRONG and those who supported the action then taken will be glad to note that, broadly speaking, the committee's proposals, if adopted by the Government, will do much to remedy the evils complained of. The committee does not favour the suggestion of the conference that powers should be given to secure not only the compulsory vaccination of all vagrants but also the compulsory detention and isolation of any vagrant "if reasonably suspected of being liable to convey infectious disease." As regards small-pox, which is chiefly in question, the committee says: "In Germany, where the whole population is efficiently vaccinated, small-pox is practically non-existent, and it seems to us that it is to general vaccination and revaccination that the public should look for effectual protection against this disease rather than to the compulsory medical examination, vaccination, and detention on suspicion

of one section of the community." It is possible to be in entire accord with this view and yet to see advantage in taking special measures with regard to tramps in epidemic times, so long as the vaccinal condition of our population remains as at present. There is, however, some force in the argument put forward by the committee that the spread of small-pox by vagrants can in the present state of the law be to a large extent controlled by what may be termed "informal" action. For example, compulsory powers of vaccination and revaccination of tramps in times of small-pox prevalence would probably effect little more than is at present often secured by medical officers of health and public vaccinators at casual wards and common lodging-houses. The recommendations of the committee that common lodging-houses should in all cases be subject to annual licence by the sanitary authority, that by-laws for common lodging-houses should not only be generally adopted but properly enforced, and that the sanitary authorities, as such, should exercise greater control over these establishments, will commend themselves to all who have practical experience of the objectionable conditions under which many common lodging-houses are at present kept.

Annotations.

"Ne quid nimis."

MR. TROUTBECK UPON THE LAW AFFECTING INQUESTS AND BURIALS.

Mr. Troutbeck, the coroner for South-west London, delivered recently at the Queen's-square Club a lecture upon the important subject of reform in our system of death certification and registration and in the conduct of inquests. That changes might be made which would protect the public more efficiently than at present and which would provide more trustworthy information as to the causes of death in many instances than is now available none will deny, and it is unnecessary to trace the history and development of a condition of the law which is admittedly unsatisfactory. The reforms, however, which Mr. Troutbeck recommends, if he has been correctly reported, seem to tend towards a state of affairs which public opinion would scarcely sanction, and the reasons upon which he bases his desire for improvement appear to be traceable to a general mistrust of the efficiency and of the honesty of the medical profession which few will be inclined to share with him. He spoke, upon the occasion referred to, of "many instances in which a doctor had mismanaged a case, or in which pressure had been brought to bear on a doctor by a wealthy and influential family to suppress facts—not so uncommon an occurrence as might be thought—or in which crime had been done in which certificates had been given without any form of independent inquiry." He had anecdotes to tell of a medical man who had certified death as due to "a mass of disease," and of another desiring to certify cardiac disease in a case in which a dagger had been found in the patient's heart. The medical men who wish for reform in death registration would probably be more inclined to point to the fact that the law which regulates the registration of deaths was passed so long ago as 1874 and that in its 17th section it appears to contemplate with indifference the burial of a body without any registration at all, providing only that those responsible for such burial shall give notice of its having taken place to the registrar within seven days or be liable to a penalty of £10. In any case improvements, even though they are initiated with a view to the prevention of possible crime, must not start from an assumption that every one is a potential criminal. A very large proportion of the relatives of deceased persons, to put it mildly, are not criminals at all and would resent with vehemence ultra-inquisitorial methods framed so as to insure the detection of the few who are principals or accessories to murder. It is a question, therefore, not of what methods would be most completely effective, but rather of what methods more effective than those now in use would be approved by the public at large. Mr. Troutbeck's suggestion is that a medical investigator should be attached to each coroner's court and that this official should inspect all dead bodies and express assent to the certificate or dissent from it, and that he should be able to order a post-mortem examination to be held by a pathologist who, in turn, would report to the coroner. A great deal may be said in favour of the independent examination and corroboration of the cause of death in all cases, subject to the observation that in many instances resentment at official interference would be felt, not by the medical man whose opinion would be submitted to a possibly unsatisfactory test, but by members of the public actuated by no sinister motives and having no reason to fear the result of the inquiry made. Anything, also, which would tend to increase the number of post-mortem examinations held would be objected to by a large number of persons well able to make their opinions heard in the House of Commons, to which all questions of legal reform must be submitted. It is perhaps best to hope, therefore, that a measure not too drastic may bring improvement in death registration within the region currently known as that of practical politics, so that at all events certification of the cause of death by a medical practitioner in a position to speak with authority may be a necessary condition of burial, except in such cases where it is for the coroner to grant an order, and that where no such certificate is at hand an effective inquiry may in all cases be held. At all events, caution and tact will have to be used, and proposed changes in the law founded upon a baseless assumption of widespread inefficiency, venality, or criminality on the part of the medical profession would necessarily be of such a nature as to be repugnant to those invited to place them in the Statute-book, and to attempt too much, where Parliamentary legislation is concerned, is prone to lead to failure to achieve anything.

THE LEGAL CONDITIONS FOR THE MEDICAL USE OF THE X RAYS.

IT is a matter for regret that at the outset the use of x rays in medicine and surgery as an aid to diagnosis fell so much into the hands of unqualified persons. This was more or less inevitable on account of the cost of the apparatus and the amount of technical knowledge required for which but few members of the medical profession were prepared. The formation of a society for the study of x ray phenomena, which all and sundry might join, still further helped to keep up the number of laymen who devoted more or less of their time to this work. Very soon many lay individuals, not to speak of several respectable firms of instrument makers and druggists, were advertising their willingness to take radiographs for medical men and later to treat cases for them. There can be no doubt that the proper person to take a radiograph is a medical man who has been specially trained in this class of work. He certainly is the only person who should ever be intrusted with the interpretation of a radiograph or with the application of x rays for therapeutic purposes. The danger of producing an undesired x ray dermatitis is a very real one, but one that medical men engaged in this class of

work find no special difficulty in avoiding, the contrary evidence of two non-medical x ray "experts" in a recent trial notwithstanding. It has been proved that the Roentgen rays can cause atrophy of the testicle in the white rat and of the ovary in rabbits; it has, moreover, been asserted that those who work constantly with the rays are after prolonged exposure rendered sterile. This property of the rays directly touches on one of the most serious social questions of the day and is in itself a powerful argument in favour of the contention that the application of the rays should be restricted to medical men trained in radio-therapeutics. Some of our continental neighbours have already made it illegal for the rays to be used by any but qualified medical men and at the present time efforts are being made to introduce a Bill in France. These matters formed the subject of a discussion at the last meeting of the British Electro-Therapeutic Society held at 11, Chandos-street, London, W., on Feb. 23rd last. The following motion was proposed by the President, Mr. J. Hall-Edwards:—

> It having been established that the use of x and other rays by persons without a registered qualification constitutes a grave social and public danger and that medical men alone are capable of administering such rays to the public benefit this society is of opinion that the use of the x and other rays should be by Act of Parliament confined absolutely to registered medical practitioners and to dental surgeons in the practice of dental surgery.

This was seconded by Dr. W. Knowsley Sibley and carried unanimously. Now that this subject has been definitely brought forward by a responsible body, such as the British Electro-therapeutic Society, which, we may add, consists entirely of medical men, it is to be hoped that their effort will meet with its due support from the members of the medical profession and, at no distant date, of the House of Commons.

THE GARDEN CITY ASSOCIATION.

THE dinner which was given in honour of Mr. Ralph Neville, K.C., chairman of the council of the Garden City Association and chairman of the First Garden City, Limited, at the Criterion Restaurant, London, W., on March 15th, was a successful and an important gathering of the friends of the movement, inasmuch as it included members of the leading professions and men and women of all shades of political and social opinion who were unanimous in their approval of the garden city scheme. That scheme has for its object the relief of overcrowded areas and a wider distribution of the population over the land. Those present included, in addition to the guest of the evening, the chairman, Lord Justice Fletcher Moulton; Mrs. Barnett, wife of Canon Barnett; Mr. Rider Haggard, Mr. H. Vivian, M.P., Mr. Idris, M.P., Mr. Aneurin Rawnsley, M. Benoit-Levey, Mr. Ebenezer Howard, Colonel F. S. Brownrigg, Canon Rawnsley, Mr. Reginald Harrison, and Dr. Arthur W. James. The chairman, in proposing the toast of the evening, referred to the research work in which the medical profession were engaged, work which he greatly honoured. The association was also engaged in scientific research of a different, though of a most useful, kind. To be successful they required a wise captain to pilot their ship through unexplored waters and in their chairman of council they had a man specially fitted for the position, a business man endowed both with imagination and honesty. Mr. Neville stood pre-eminent in ability and character. In responding, Mr. Neville said that it was only a few years since a few people had banded themselves together to fight the evils of overcrowding in towns and the depopulation of the country by carrying out the idea set forth by Mr. Ebenezer Howard; and he was surprised to find that the movement had achieved its present position and influence in so short a time. The feeling was growing daily stronger that civilisation, which had done so much for many of them, must no longer grind multitudes under its heel. Unless the population were enabled to make progress in physical development all efforts to produce moral and spiritual and intellectual development would fail. Our industries must be carried on in healthy conditions or our nation must go under; and the task of the association was to show that these industries could be so carried on. Already the association had produced two notable schemes. Mrs. Barnett's garden suburb scheme was bound to succeed. If all the districts surrounding London could be so dealt with, a very considerable amount of the evils resulting from the enormous growth of London would be ended. The association hoped by acquiring a site before the district had become populated to insure that the increased value of land due to the presence of population should be turned to the advantage of that population and not to the advantage of others. By scattering the industrial population in groups surrounded by agricultural belts new and easily accessible markets would be provided for the produce of home cultivation. The Garden City at Letchworth now only wanted faith and money to insure its complete success. If the public would give the means to complete the Letchworth and Hampstead projects, garden cities and suburbs would be found springing up on every side. Speeches were also delivered by Mr. Reginald Harrison, Mr. Rider Haggard, Mr. Vivian, M.P., M. Benoit-Levey (Association de Cité-Jardin), Mrs. Barnett, and others. Mr. Harrison referred to the late Sir Benjamin Ward Richardson's "City of Hygeia," and remarked that any scheme which had for its object the making of life healthier and longer must be hailed with satisfaction by all members of the medical profession. This sentiment we heartily endorse and we wish every success to the movement.

DEATH CERTIFICATION AFTER AN ACCIDENT.

IN the "Northern Counties Notes," published in THE LANCET of March 17th, p. 793, mention was made of a case commented upon under the heading, "Is Hernia an Accident?" in which a coroner wrote "a strongly-worded letter" to the house committee of the Newcastle Infirmary complaining of the conduct of the house surgeon. This gentleman had given a death certificate to the relatives of a man who had died as the result of a strangulated hernia and the coroner, who had afterwards been told that the hernia was due to an accident, considered that he should not have done so. At the inquest which the coroner held after having had the body brought back from the home of the deceased to Newcastle, he exonerated the house surgeon from blame, because it was proved that the question of accident had not been raised until after the body had been taken from the infirmary and that the house surgeon knew nothing of any such suggestion. As a matter of fact, it was proved also that the hernia was of old standing and that the accident had not been responsible for the death. It is a little difficult to see what reason the coroner had for complaint or why his displeasure should have taken the form which it did. The conditions under which a medical man should not give a certificate are not easy to define, but it may fairly be said that if he has reason to think the case to be one in which an inquest ought to be held he will act rightly in refusing. Inquests are to be held where there is reasonable cause to suspect that the deceased has died either a violent or an unnatural death, or has died a sudden death of which the cause is unknown, or in prison, or in such place and in such circumstances as to require an inquest in pursuance of any Act (Coroners' Act, 1887, Section 3). On the other hand, when a deceased person has been attended during his last illness by a registered medical practitioner, that practitioner "shall sign and give to some person required by this Act to give information concerning the death a certificate stating to the best of his knowledge and belief the cause of death" (Registration of

Births and Deaths Act, 1874, Section 20). In other words, a medical man is under a legal obligation to certify the cause of death if he is in a position to do so. That inquests may have to be held after a certificate has been given by a medical man is a contingency contemplated by the Act last quoted, for it orders (Section 16) that if the death has been registered before the coroner furnishes the particulars disclosed at the inquest these shall be entered in the prescribed manner without any alteration of the original entry. The giving of a certificate by a medical man does not prevent an inquest being held, although it may tend to do so by facilitating burial. A medical man who gives a certificate with a view to defeat the ends of justice is likely to find himself in a very unenviable position and if at an inquest it is found that a certificate likely to have such an effect has been given carelessly the medical man again is liable to be blamed. This, however, does not justify a coroner, a minister of justice, in rushing hastily to a wrong conclusion and writing a letter such as that described before inquiry and based on a hasty assumption only, and the writing of a letter of complaint in itself hardly seems consistent with the dignity of a coroner's judicial position. Coroners are apt to complain, also unreasonably, when medical men refuse to certify in instances where they (the coroners) believe that they should do so, and in both classes of cases coroners seem to forget that their own duties are assigned to them under one Act of Parliament, while under another certification of the cause of death by medical men is provided for. The law might be improved in many respects, but until it is the exercise of tact and forbearance is sometimes necessary in order to secure harmonious working and the carrying out of the objects which the two statutes quoted from have in view.

FRAUD WITHOUT PREJUDICE TO HEALTH.

IN these days when the practice of substitution is so rife the line of defence is nearly always that the substituted article is wholesome or without prejudice to health and that therefore the selling of a sham is justifiable on hygienic grounds. We are occasionally asked why as medical journalists we interest ourselves in such questions as the substitution of cotton for linen or silk, of plain spirit for brandy, whisky, or rum, of glucose for cane sugar in marmalade, or of cheap fruit substitutes in jam, since no harm to the health can accrue from such well-recognised practices. We must admit that in some cases it is difficult to say with any certainty that the practice is directly prejudicial to health, although on ethical grounds there can be no doubt that in effect the sale of an article containing a large proportion of substitute unknown to the buyer is plainly and simply cheating. The onus of proof, however, that a substitute is without prejudice to health is, it seems to us, on the seller, but as a rule he is seldom able to produce any definite evidence in support of his view. He will, for instance, contend that cotton is a more hygienic article of clothing than linen, that plain spirit is more wholesome than genuine brandy or whisky, that turnip or vegetable marrow is better than apple, that glucose is superior to cane sugar, and so forth. His contention is very often no sounder than saying that milk is the better for being watered or for having its cream abstracted. And this furnishes us with an answer as to why we attack the whole practice of substitution. Apart from the fact that the principle is immoral there can be obviously instances in which the substitute may not be wholesome and prejudice to health may be a real factor. Food, at any rate, must be something more than wholesome, it must be nutritious, and any interference with its nutritious qualities must necessarily concern health. Milk-and-water may be wholesome but the standard of nourishment of the mixture must obviously be lower than pure milk. Water is wholesome enough but its use may be so liberal as to reduce the milk to the level of a "starvation diet." In the same way it is not improbable that many food substitutes, though not poisonous, are greatly inferior in nourishing quality to the genuine article, in which case we should be justified in saying that the use of such was distinctly prejudicial to health. Is glucose, for example, from the dietetic point of view as satisfactory as malt or cane sugar, or apple as nourishing as plum? It is open to doubt.

SERVANTS' QUARTERS IN MODERN FLATS.

A CORRESPONDENT writes that during the past six months he has had opportunities of seeing many modern flats and is startled at the accommodation provided for the servants, even in the best flats which he has visited. It generally consists of a small room, or rather cupboard, off the kitchen, without fireplace, with a little window usually high up and looking on to some small inclosed space, and hardly large enough to contain cubic air space for one person, certainly not sufficient for the two poor girls whom it is supposed to accommodate. In some new flats in the Bayswater district the writer was shown one of these rooms, intended to accommodate two girl servants, opening out from the kitchen—no fireplace, one small window high up—which would hardly take in two beds. We agree with our correspondent that the question of servants' quarters in modern flats is one that demands serious attention, although we trust that they are not all quite so bad as his experience would suggest.

STREPTOCOCCIC SEPTICÆMIA AND MENINGITIS DUE TO TONSILLITIS; RECOVERY UNDER INJECTIONS OF COLLARGOL.

AT the meeting of the Société Médicale des Hôpitaux of Paris on Feb. 23rd M. Oettinger and M. Malloizel reported the following interesting case. A robust man, aged 32 years, was admitted into hospital on May 24th, 1905, for violent headache and a temperature of 104° F. On the 20th he was taken ill and had dysphagia and headache. On the 22nd he was worse and there was trismus. On the 25th he was somnolent and lay in bed with his head retracted. The parotid regions were swollen but not painful and there was no trismus. The throat was red but showed no special characters and the tongue was furred. On the left side was a small, hard, and tender submaxillary gland. The temperature was 101·6° and the pulse was from 88 to 100. The patient complained of severe headache which was particularly frontal and increased by pressure on the points of exit of the infra-orbital nerves. The reflexes and pupils were normal. There were slight rigidity of the neck and dermography. Lumbar puncture was performed; 25 cubic centimetres of clear fluid, which was not albuminous, flowed out in a jet. It contained some red corpuscles and lymphocytes. The urine contained a little indican and a notable quantity of albumin. The patient did not sleep at all during the night and on the following day the headache was worse, particularly when he made the least movement, and there was photophobia. Nevertheless, he was perfectly sensible. On the 28th the pulse was 92 and dicrotic and the temperature was 104·9°. In the evening the temperature fell to 101° and the headache considerably diminished. On the 29th there was a rigor and the temperature rose to 105°, but the headache had disappeared. During the night there were two more rigors. On the 31st there was dissociation of pulse and temperature, the former being from 68 to 62 and

the latter 105·4°. The patient was somnolent and there was slight incontinence of urine and fæces. The respirations were frequent, numbering 36. The right knee-jerk was absent and the left was much diminished. There were clonic contractions of the muscles of the right side of the face, depression of the left labial commissure, and slight double ptosis. The arms were in a cataleptoid state and there was tremor of the hands. The cerebro-spinal fluid was sero-purulent and contained streptococci. Blood removed from a vein yielded streptococci in pure culture. A centigramme of collargol was injected into the spinal canal. On June 1st the patient was in a state of hebetude and there was internal strabismus of the left eye. The temperature was 104·3°. One cubic centimetre of collargol was injected into the veins on this and on the following days and the patient improved. On the 6th the cerebro-spinal fluid was fluorescent but limpid and slightly albuminous and no microbes could be found in it. A centigramme of collargol was injected into the spinal canal. On the 7th the state of the patient was greatly improved. The knee-jerks reappeared. The intravenous injections of collargol were continued and the daily dose was increased to one and a half cubic centimetres on the 11th to two on the 12th and to three on the 13th. The treatment was discontinued on the 26th. During this time there were rigors and an attack of bronchitis and pneumonia at the right base. The patient wasted "to a skeleton" but convalescence began on the 26th and recovery ensued. A curious hypertrophy of the muscles of the left side of the face, neck, shoulder, and arm followed. This case presents several points of interest. The development of streptococcic septicæmia after phlegmonous tonsillitis is rare. The occurrence of meningitis, first cerebral and then spinal, during this septicæmia is also unusual. Unlike some other microbes, streptococci have little tendency to grow in the central nervous system. The injections of collargol appeared to have a favourable action. Moreover, recovery from streptococcic meningitis is rare. The muscular hypertrophy is difficult to explain. M. Oettinger and M. Malloizel think that it was probably due to myositis consecutive to an infection.

UNCERTIFIED CAUSES OF DEATH IN LANCASHIRE TOWNS.

IT appears from the Registrar-General's quarterly returns that during last year the causes of all the 73,002 deaths registered in the County of London, excepting only 147, were certified either by a registered medical practitioner or by a coroner after inquest; whereas in 15 of the largest Lancashire towns the causes of 1121 of the 49,315 deaths registered during the year were uncertified. The proportion, therefore, of uncertified deaths, which was but 2 per 1000 in London, was equal to 22 per 1000 in the 15 largest Lancashire towns; thus in an equal number of deaths there were 11 uncertified causes in the Lancashire towns to one in the County of London. The importance of due certification of the cause of all deaths, previously to their registration, from a social and public health point of view, makes it desirable to inquire more closely into this deficient certification in the Lancashire towns, in which the proportion of the deficiency varied widely. In Oldham, for instance, the proportion of uncertified deaths, which in 1904 was but 2 per 1000, fell in 1905 to 0·5 per 1000, while the lowest proportions of uncertified deaths last year among the 14 other large Lancashire towns were 4 per 1000 in Salford and Bolton, 6 in Wigan, and 11 in Burnley. On the other hand, the proportions of uncertified deaths ranged upwards in the other towns to 34 per 1000 in Liverpool, 39 in Bootle and Barrow-in-Furness, 40 in Blackburn, 44 in St. Helens, and 50 in Warrington. Thus in Warrington during last year the cause of 1 death in 20 was not [certified either by a registered medical practitioner or by the coroner. On the whole, it is, however, satisfactory to note that the proportion of uncertified deaths in these Lancashire towns was slightly lower last year than in 1904; but it should at the same time be pointed out that the proportion showed an increase last year in Liverpool, Barrow-in-Furness, Blackburn, and Warrington, all of which towns showed marked excess of uncertified deaths both in 1904 and 1905. It has often been noticed that there is a fairly constant relation between the proportion to total deaths of inquest cases and of uncertified causes of death. It is here worth noting that in London last year the proportion of inquest cases was equal to 99 per 1000 of the deaths registered, against 96 in 1904. In the 15 largest Lancashire towns the proportion of inquest cases averaged only 62 per 1000. The smallest proportions of inquest cases were 38 per 1000 in Warrington, 44 in St. Helens, 45 in Preston, and 49 in Barrow-in-Furness, while in the other Lancashire towns the proportion ranged upwards to 68 in Manchester, 69 in Bury, 71 in Salford, and 73 in Bolton. In proof of the still existing relation between the proportions of inquests and of uncertified deaths it is only necessary to point out that the three of the four Lancashire towns showing during last year the largest excess of uncertified causes of death also showed the lowest proportion of inquest cases; while in each of the four towns showing the highest proportion of inquest cases the percentage of uncertified deaths was exceptionally low. Until legislation is enacted on this subject, based upon the recommendations of Sir Walter Foster's committee dealing with the certification of causes of death, the reduction of the number of uncertified causes of death can only be effected by the action of coroners in holding inquests in such cases. It may therefore be hoped that the sanitary authorities in some of these Lancashire towns will recognise the desirability of approaching the local coroners with a view to obtain their at present indispensable assistance in securing the due certification of those deaths occurring without the attendance of a registered medical practitioner during the last illness of the deceased.

THE PHARMACOLOGICAL ACTION OF DIGITALIS STROPHANTHUS, AND SQUILL.

Dr. G. S. Haynes has contributed to the February number of the *Bio-chemical Journal* further results of an investigation of the pharmacological action of the group of cardiac tonics.[1] The specific action of these drugs on the heart can be divided into two stages; a first stage characterised by stimulation of the cardiac muscle and of the vagal nerve endings; and a second in which the tonus is much increased and the rate accelerated by the extension of the action on the muscle to the excito-motor area of the heart. Squill differs in several respects from digitalis and strophanthus in its action on the heart. Thus in therapeutic doses it increases the force of contraction to a considerably greater extent than the last-named drugs; both systole and diastole are more complete and prolonged; in so far as the peripheral vagal mechanism is concerned squill slows the heart beat more than digitalis, and considering its relative toxicity, more than strophanthus; lastly, squill produces more vaso-constriction of the coronary vessels than does either digitalis or strophanthus. Dr. Haynes finds that digitalis is less efficient as a cardiac stimulant than squill, in that it has not the same effect in increasing the energy of contraction of the heart, even when a relatively higher dose is employed. Digitalis has less peripheral effect on the vagal mechanism than squill. Strophanthus occupies a position considerably below squill and slightly below digitalis in

[1] Compare THE LANCET, August 12th (p. 477) and Dec. 16th (p. 1732), 1905.

respect of its effect on the force of the heart beat. Its tincture slows the heart more than does either of the other two tinctures in equal doses. Strophanthus differs from these drugs in having practically no action on the coronary vessels. It is a dangerous drug, being very liable to cause sudden death of the heart without previous excitation of the excito-motor area. To mucous membranes digitalis is more irritating than squill, while strophanthus has very little irritant action. Dr. Haynes concludes that in any case where it is desirable to raise the blood pressure and to stimulate the heart squill should be used in preference to digitalis and strophanthus, as it acts more quickly and more effectively than either, and does not cause as much gastro-intestinal derangement as does digitalis. Every precaution that is observed when digitalis is properly administered should also be observed in the use of squill. It should not be given for many days without intermission and a close scrutiny should be kept on the pulse-rate, which should not fall below 60, and on the amount of urine passed, a rapid diminution of which indicates that the administration of the drug should be stopped.

THE "COLD SNAP" AND THE DEATH-RATE.

IT is to be feared that the result of the abnormally cold weather of March 12th to 14th will be seriously shown in the death returns, especially in Scotland and the north of England, where the severity of the temperature was the most intense and the change from the mildness of spring to midwinter and then from midwinter to spring again was the most sudden. In nearly all parts of Great Britain north of the Humber the meteorological returns demonstrate that during three days the temperature was about 15° below the normal for the time of year and lower than at any time during the true winter, while the recovery of temperature was so sudden and pronounced that it has rarely been equalled in these islands. Such violent variations in temperature are fairly common in a continental climate, especially in certain parts of America and Northern Europe, where it is to be supposed the inhabitants become accustomed to them. In those regions one day may be 30° or 40° or even 50° warmer or colder than the one immediately preceding, but a change of more than 15° between one day and the next is rarely experienced in this country. On the present occasion, Thursday of last week was between 15° and 20° warmer than Wednesday throughout the whole of the United Kingdom except at a few outlying spots on the coast, and in some localities in Scotland it was more than 20° warmer. In the more southern counties of England and Ireland the temperature never fell to an abnormally low point and the change of 15° or 16° which occurred during the night of Wednesday sent the thermometer to a level far above the normal.

THE PREVENTION OF CONSUMPTION IN SCOTLAND.

THE Local Government Board of Scotland has issued to local authorities and medical officers of health a circular on the administrative control of pulmonary tuberculosis. It states that in May, 1905, the Board issued to medical officers of health a schedule of inquiry on this subject to ascertain the present practice of local authorities. The replies show that in several towns and districts the local authorities and their officers have made some organised efforts to check the spread of the disease by the distribution of information, by the disinfection of houses, by the segregation of advanced cases, by the educative control of less advanced cases, and by the special treatment of early cases. In many localities, however, no systematic efforts of any kind have been made. Generally it may be said that in no locality have the local authorities adequately developed the special organisation necessary for the full administrative control of the disease. The present circular points out that pulmonary tuberculosis is an infectious disease within the meaning of the Public Health (Scotland) Act, 1897, and accordingly the sections of the Act applicable to other infectious diseases are equally applicable to this, and the obligation on the local authorities to deal with and to control infectious disease extends to pulmonary tuberculosis, therefore when persons suffering from this disease are treated in their own homes the authorities must see that disinfection is carried out at frequent intervals. Further an endeavour should be made to see that disinfection is carried out in all places of public resort. An arrangement should be come to with persons in charge of schools, churches, halls, theatres, markets, railway stations, and so on, by which those places may be periodically disinfected by the officers of the local authority. The disinfection of public conveyances, such as railway carriages, tramcars, omnibuses, and hackney carriages, is also to receive attention. It is pointed out that for the effective application of the Public Health Act to pulmonary tuberculosis a system of notification is essential. In some localities a system of voluntary notification has been organised. It is open to the local authorities now, with the approval of the Board, to add pulmonary tuberculosis to the list of diseases notifiable under the Infectious Disease (Notification) Act, 1889. The Board will be prepared to give favourable consideration to any application for its approval, provided that it is satisfied that the local authorities in question are in a position and are ready to deal effectively with the cases notified to them.

THE AFTER-CARE ASSOCIATION.

THE report of the council of the After-Care Association for the year 1905, which has just been issued, shows that the number of poor persons discharged from asylums for the insane as recovered whose cases came before the council in 1905 was 288. Of these 176 were women and 112 were men. In 1904 the number assisted was 255 and in 1903 it was 250. This charity is the only one of its kind in the United Kingdom and the good work which it does in assisting poor persons discharged from asylums for the insane from all parts of the country deserves the support of the charitable public and its work might be considerably and usefully extended if increased financial help were given to it. The association requires at least a yearly income of £1000 but, with the exception of last year when the funds were increased by a legacy and several special donations, the income has never risen higher than £818. The bankers of the association are the Union of London and Smith's Bank, Argyll-place, London, W., and the address of the secretary is Church House, Dean's-yard, Westminster, London, S.W.

THE INTERNATIONAL CONGRESS OF MEDICINE AT LISBON.

WE understand that the South-Eastern and Chatham Railway has arranged, conjointly with the French railways, to issue return tickets from London to Irun at the greatly reduced rates of £6 13*s.* first-class and £4 12*s.* second-class for members who propose to travel overland to attend the Fifteenth International Congress of Medicine which is to be held at Lisbon from April 19th to 26th. The tickets will be available *viâ* Dover and Calais or by Folkestone and Boulogne at the option of the passenger, but members are advised very strongly to take the 10 A.M. service from Victoria *viâ* Folkestone and Boulogne, as that service is the least crowded and the train reaches Paris at 6.4 P.M., in ample time to dine before continuing the journey by the 8.7 P.M. express from the Quai d'Orsay station. This train reaches Irun at 8.50 A.M.

on the following morning. The tickets are available for 45 days and will be issued to the wives and children of members but not to other relatives. They can only be obtained at the Victoria Station of the South-Eastern and Chatham Railway on production of the *cartes d'identité* from April 1st onwards. It is believed that the London, Brighton, and South Coast Railway will also make reductions for members who prefer to travel by that route but the particulars are not yet to hand. The International Sleeping Car Company gives notice that members who desire to travel to Lisbon by the Sud express must book their seats some time in advance. The train leaves Paris for Lisbon on Mondays, Wednesdays, and Saturdays.

DENTISTRY IN FACTORIES.

IT is pleasing to note that employers of labour are not only retaining the services of medical men for their employés but in a few instances are also calling in the services of dental surgeons, realising that a large amount of the work of the medical man is often frustrated by the condition of the teeth. Messrs. Peak, Frean, and Co. have during the last year given their employés this advantage with, we think, most satisfactory results. During the 12 months 338 patients were seen; 1053 teeth were removed under general anæsthetics and 316 under local anæsthetics. 763 fillings were inserted and 58 dentures adapted. Such figures speak volumes for the officer in charge and the benefit thus given by the employer to the employés should encourage other firms to adopt a similar policy. The problem of the treatment of dental disease has been from time to time referred to in these columns and the importance of teaching prevention insisted on. For it is only by prevention that we can hope to deal with in anything like a really satisfactory manner the enormous amount of dental disease seen in the present generation. Employers of labour could do much to prevent dental disease if they would circulate among their employés the following rules for the care of the teeth.

1. The teeth must be kept clean.
2. Use a small tooth-brush with stiff bristles. Use a little soap and some precipitated chalk.
3. Brush all the teeth, especially the back ones. Brush all surfaces of the teeth.
4. Clean the teeth immediately before going to bed. Take no food of any sort afterwards. Clean the teeth again in the morning.
5. Clean teeth do not decay.

AN OLD ANTI-QUACKERY CRUSADE.

ATTEMPTS to stem the flowing tide of quackery are not merely modern, even in the United States of America. It appears that as long ago as 1828, if not earlier, attempts were made by the medical profession in Philadelphia to counteract the sale of nostrums which it was the custom of the day to prescribe in public hospitals as well as in private practice. The first report of the committee of the Philadelphia Medical Society on quack medicines was published in 1828 and contains some references to a still earlier anti-quackery crusade of which we have no details. The drug chiefly exposed by the Philadelphia committee was known as "Swaim's Panacea," of which sarsaparilla was the chief ingredient. It was administered indiscriminately for skin diseases, cancer, rheumatism, and dyspepsia, the last-mentioned being then as now extremely prevalent in America. Contemporary newspapers advertised the nostrum in terms of extravagant laudation. The committee, in its condemnation of this unwisely prescribed drug, employs a method which might well be imitated to-day. It prints a string of testimonials, or rather testimonies, from victims of the nostrum. One writer compares the sensation produced by the panacea to a stream of fire passing through the bowels. After taking it another has been salivated, another suffers from incurable diarrhœa, and "Mr. K., the scrivener," has died from ulceration of the intestines. These, says the report sententiously but truly, are "commentaries on the nature of such medicines and the ignorance of their proprietors, which must be understood by the least discerning, and produce sympathy in the most unfeeling."

MEDICAL EXCURSIONS FOR STUDENTS OF MEDICINE.

DURING the excursion to France for British students of medicine, to which we have already referred, it is intended that a visit shall be paid to Angers on April 23rd. Angers is a town which is of special interest to the inhabitants of these islands for its hospital was founded by an English king—viz., Henry II.—and coming down to later times the great Duke of Wellington studied at its military academy. We have received from M. Monprofit, who is President of the French Surgical Congress for 1906 and who is chief of the surgical department at the Angers Hospital, a most courteous letter in which he expresses his willingness and desire to do everything to render the visit of the British medical students to Angers both of interest and of use. He says that he will hold the whole day of their visit at their complete disposal. We take this opportunity of thanking M. Monprofit cordially for his kindness and hope that British medical students will take advantage of the opportunity to visit Angers in exceptionally favourable circumstances.

IS PATENT-STILL WHISKY A THIRST PRODUCER?

So strong has been the advocacy of a very large section of the spirit trade for patent-still spirit that we have long suspected that it possessed a quality which suited their business interests. We thought that the chief reason for diluting malt spirit with patent-still spirit was that the latter could be produced more economically than the former and proved to be an advantage to the consumer because it lightened the "full" qualities of an all-malt spirit. Apparently the health of the consumer was considered. We now learn from a correspondent, who is a man of scientific pursuits, that it is contended that if an ordinary individual takes a moderate quantity of diluted pot-still whisky it satisfies his thirst for a considerable time, but if he takes in the same way patent-still whisky the latter produces a dryness of the throat which calls urgently for another libation within a very short time. The Board of Inland Revenue, our scientific correspondent states on excellent authority, is fully alive to this peculiarity of patent-still whisky and has fostered the consumption of patent-still whisky on this account. This sounds like salting the beer with a similar object in view. The story would seem to lend some colour to the indifference shown by our Government authorities with regard to legislation on this question, but we cannot imagine that they would encourage the sale of patent-still spirit because its consumption is likely to induce the consumer to call for more and thus to swell the revenue receipts by what can only be stigmatised as immoral resources. We have heard that a pure malt whisky promotes temperance to a degree greater than a whisky deficient in flavour can do. It should be borne in mind that the neutral patent-still spirit added to new crude whisky diminishes its coarseness and by disguising the potency of the

spirit a false impression is given of its age. We have also heard, and can well believe it, that the absence of flavour induces the consumer to mix much less water with his spirit than he would if he drank a well-matured pure malt whisky, but we think that this is the first time the "dry throat theory" about patent-still whisky has come under our notice. The suggestion is interesting and may possibly find some explanation in the freedom of the spirit from secondary products and flavourings. Pure water may act as a protoplasmic poison, causing the rupture of cells by reason of its rapid diffusive power, a power which is considerably modified when salts, such as those of lime, are dissolved in it. The same may be true of pure spirit.

SLEEPING-SICKNESS AND THE SOUDAN.

WE are informed that His Excellency the Governor-General of the Soudan has directed a commission to be appointed to investigate the possibility of the extension of "sleeping-sickness" into Soudan territory. The members of the commission are Lieutenant-Colonel G. D. Hunter, D.S.O., R.A.M.C.; Dr. Andrew Balfour, director of the Wellcome Research Laboratories, Khartoum; and a British medical officer of the Egyptian Army, or a medical inspector of the Soudan Medical Department, or such members as may be hereafter appointed. The terms of reference are:—

1. To ascertain the distribution of various species of tsetse flies or other biting flies in the Soudan.
2. To ascertain if the disease at present exists in Soudan territory If so, to determine the exact areas and to what extent the distribution of the disease coincides with the presence of the tsetse or other flies in these areas.
3. A systematic investigation of the blood of a population in an infected district.
4. A thorough and complete research into the character of the disease, especially as regards its origin and spread.

THE Friday evening discourse at the Royal Institution of Great Britain, Albemarle-street, Piccadilly, London, W., on March 30th, will be delivered by Professor P. Zeeman, Hon. Mem. R.I., of the University, Amsterdam. The subject is Recent Progress in Magneto-Optics. The lecture will commence at 9 P.M.

A PROVINCIAL meeting of the British Balneological and Climatological Society will be held at Bath on Saturday, March 31st. As this will be the first meeting of the society held in the provinces the council trusts that the Fellows will attend in large numbers.

THE Second International Congress on School Hygiene will be held in London from August 5th to 10th, 1907, the President being Sir Lauder Brunton. We hope to give details of the proposed arrangements in a future issue.

His Majesty the King has been pleased to confer upon Lieutenant-Colonel H. H. R. Charles, I.M.S., surgeon to the Prince of Wales in India, a Knight Commandership of the Royal Victorian Order.

A CRITICAL CONSIDERATION OF SOME POINTS IN THE RECENT BRADSHAW LECTURE ON CARCINOMA.

BY W. H. RANSOM, M.D. LOND, F.R.S.

IF I have rightly understood him, and you will grant me space, I would like to comment on Mr. H. T. Butlin's recent Bradshaw lecture on Carcinoma.[1] In it he seems to teach that carcinoma is itself a parasitic disease, although no accepted parasitic cause of it has as yet been established. That this is so because it lives on, in, and at the expense of the host, although the same can in a sense be said of some of the normal tissues and structures. That it is an independent organism, although he gives no proof of this statement. That the structural elements of which it is composed are not directly derived from those of the host, although this statement is still disputed by some pathologists. That its proper cells multiply and thus spread the disease, while for him the structural elements of the stroma are not such proper cells; yet he does not define or give a diagnostic criterion of what he calls the proper cells. That the proper cells of a carcinoma invade the normal epithelial cells, displace and destroy them, but are not produced either by a change of them or are changed into them, yet he does not explain their origin. That the cells of the stroma are derived from the nearer vascular connective, never by a transformation of the carcinoma cells into them, and that although they are constants in each carcinoma they are not essential parts of it. So that he here deals with the proper carcinoma cells as not epithelial cells and yet as not subject to the wide biological rule which governs the nutrition, growth, and development of the two tissues in most, if not all, organisms in relation to each other—that is, the epithelium and the connective. That there is no direct evidence that the cells of even the youngest carcinoma are derived from the cells of the part in which it first appeared, but he does not deal with the question of indirect evidence or indicate his view as to the true source from which they are derived. He is content to assert that "the carcinoma cell is an independent organism" without showing us its diagnostic criterion or its origin.

Mr. Butlin attaches importance to an occasionally observed conjugation of the nuclei of carcinoma cells but this fact cannot be of primary importance for the cell which is said to conjugate is also said to pre-exist. He seems to doubt whether a carcinoma cell ever dies a natural death, but he is certain that it is the unit independent organism, the parasite. He considers that it can resist very low temperatures and does not itself produce a virulent substance although it suffers from the actions of pathogenic agents; but he does not here note that in this way it is not shown to be a parasite or in essentials to differ from some normal tissues. In harmony with his teachings he attempts to give an explanation of the observed succession of phenomena; in the growth, spread, and disintegration of a carcinoma, including in the idea the stroma which he thinks it "commands," without explaining at all how a "command" operates. And he does not, as I think the facts demand, give us an explanation of the malignity. He takes "no heed" of the observed and striking resemblances between carcinoma cells and the normal epithelial cells of the tissue in which it primarily appears; and he does not here justify this neglect of an important fact. Similarly he passes lightly over the primary origin of the carcinoma cell and he seems to associate the frequently met with subsequent death and disintegration, as I think the signs of malignancy, with some destructive inflammatory process set up within the new growth, and perhaps excited by it acting as a parasite, but for him it is no essential part of the process of a carcinomatous growth.

Mr. Butlin deals carefully and cautiously with the different liabilities of the parts of an organism to carcinoma, with its states of previous health, local and general, the possible influence of soil, climate, habitation, and age, and on these questions I will not stay to comment further than to commend his caution. In support of his contention that the carcinoma cell is itself a parasite he calls attention to some facts, as he considers them, that in all parts of the same host it presents similar characters, that it is transmissible in that host, and that it can live outside the body of its host. But he does not show that similar or closely allied facts do not occur in other living parts which are not accepted as themselves parasites, as, in fact, is the case. He is satisfied with the assertion that these events which he considers characterise a parasitic growth are met with in carcinomata, and although the case is then more complex are seen even when it is inoculated into another host, say from one mouse to another, a fact also not limited to carcinoma. He denies the infectivity of carcinoma, yet he claims for it that it is "communicable," but he does not show wherein the distinction exists. He seems to limit his use of the word "communicable" to the instances in which the disease is transmitted to another host and he does not include in this idea the local infectivity, as it has been

[1] THE LANCET, Dec. 16th, 1905, p. 1747.

called, I think by Burdon-Sanderson, or the spread of the primary malady to another part of the same host.

Evidently Mr. Butlin considers that when we have not isolated the infective agent its absence may be assumed. So that the spread of the primary growth even in mice is not here adequately dealt with. He teaches that carcinoma is, at least in all vertebrates, one and the same disease, and that in them it is "communicable," but he by no means proves this; he does not even attempt to show us which are its diagnostic characters in them, and he ignores here the possibility of the existence of different species or established varieties of carcinoma. He points out that all the experimental attempts to cultivate a carcinoma cell outside the body of the host have failed, but he quite ignores the possible existence of an extrinsic irritant agent or parasite in, or on, or near the said carcinoma cell, which alone he has here in view. He grants that it is possible that a carcinoma cell may be a parasite unable to live outside the body of the host, but he does not adopt this view; and he concludes that under certain conditions the carcinoma cell can live outside the body of the host, yet he always retains the doctrine that the carcinoma cell is itself the parasite and not merely its host. He deals, though inadequately, with the spread of a carcinoma within the body of the host, says that then the carcinoma cell breeds true, a statement which is in the main justified by observation, though the fact is not characteristic of carcinoma. He says that it is in all parts essentially the same, without pointing out in what this essential likeness consists, important as that would be were it known, as it would be a diagnostic anatomical criterion, imposed by the primary growth upon its successors. He attaches importance, I think too much importance, to the fact that inoculations can only be made into animals of like species or varieties, and he teaches that in this transference the carcinoma cell is the active intermediate; but he does not show that a single carcinoma cell, or perhaps a part of one, may be so operative, and without this his conclusions are not valid, and he has given no justification for the great distinction he draws between the spread of a carcinoma in the primary host and into another one of a like variety or species.

In speculating about the origin of the carcinoma cell Mr. Butlin refers to Hauser's view that it belongs to a new race of cells, to the irritation theories, and to those which suggest an embryonic cell as the beginning, as well as to Farmer's views, but he accepts none of these and is, I think, in part justified. He says that he is more concerned to find the "*nature*" of carcinoma than its "*origin*," thinking apparently that the two ideas are separable, which I dispute; and he claims the freedom to leave out the question of the genesis of carcinoma, although he grants that if we consider the carcinoma cell to be an independent organism—a parasite—it would be "absurd" to leave out the quest as to its origin, assuming thus a mental attitude which I cannot comprehend. He teaches that we must either grant that the parasite, the carcinoma cell, is introduced from without, or is formed in some unknown way within the host. And this alternative I am disposed to assent to, although I do not grant the correctness of the first clause, in which the carcinoma cell is considered to be itself a parasite. He teaches that the arguments which have been used to show that carcinoma may originate in consequence of irritation or of some environmental conditions are invalid. Thus he thinks that the fact that a primary carcinoma spreading in its host, breeding true, and strongly resembling the nearer epithelial cells, is adverse to the idea of an extrinsic origin, which conclusion is, I think, not valid. He recognises that each type of carcinoma—squamous, cylindrical, or spheroidal—begins only from its own type of cell tissue; yet he considers that this fact is in opposition to the idea of an extrinsic origin of the malady, although to my mind it tends to support it, if we do not assume that the carcinoma cell is itself the parasite but may possibly contain one. He suggests the possibility that a carcinoma cell may be due to a crossing between it and a normal cell and apparently does not see that in this way he assumes the pre-existence of that for which he seeks to find the beginning. He considers the possibility of several different parasitic carcinoma cells but he dismisses the idea as too improbable, although if we were to think of the parasite not as the carcinoma cell itself but as possibly an extrinsically derived parasite affecting it, the idea is by no means an improbable one. He recognises the fact that carcinomata differ among themselves and thinks they may have different powers, but he does not explain satisfactorily in this way the observed phenomena.

In all these arguments in reference to the possible extrinsic or intrinsic origin of carcinoma Mr. Butlin has, I consider, failed to show that it is not extrinsic. Then leaving the carcinoma cell he deals with the whole new growth which also, he teaches, is itself a parasite. He passes over or with very scant notice the often very diversely formed and arranged proper cells of the new growth and he does not say which of them is essentially the carcinoma cell, or whether all of them are so, while he leaves the general impression that all or any of them are or may be so. The stroma, he considers, holds a subordinate position, but gives for this view no justification. He points out that it grows from the vascular connective, not from the epithelial-like cells, and he does not here seem to consider this as an example of the constancy of a biological law. He teaches that were the stroma a response to an irritation set up by the carcinoma it would be similar in all the varieties, a statement he does not prove and I dispute; and he points out, as I think rightly, that in the varieties of carcinoma the stroma is always characteristic of the variety. He imputes the stroma to a "command" issued by the carcinoma without giving any intelligible explanation thereof, but he seems in some way disposed to compare it with his idea of the influence of an epidermis. And he is to me obscure on this point. He holds that it is not conceivable that a parasite from without can exercise an influence on the growth of the neighbouring tissues; and I think that were he to study parasitism, especially in plants, he would modify this idea very much. He deals with the question of the age incidence in carcinoma carefully and prudently; he recognises that it is very often met with late in life, but not solely so, and he attaches less weight to this fact than some do, and herein he seems justified.

From a consideration, however, of all the facts in regard to the whole new growth, the carcinoma cell, and the age incidence taken together, Mr. Butlin concludes that the origin of the parasitic independent organism is not from without—a conclusion which may be true if the carcinoma or its cell itself is really a parasitic independent organism, but is not justified if we consider that this teaching is but a mere hypothesis and that the carcinoma may possibly be derived from without in ways as yet unknown and may be related to a parasite while yet it is not one itself. For him, therefore, the origin of the carcinoma cell, if it has a beginning, is, and must be, only intrinsic, and this doctrine he explicitly asserts, although he still maintains that intrinsically it cannot be derived from or by any mode of transformation of existing tissue elements in the host, and he is thus left without any material basis for the foundation of his doctrine. The carcinoma cell, a parasite, an independent organism, apparently begins, in his view, upon or from nothing material. He considers Hauser's view "astounding" and rejects it, yet he says he is "quite confident that time and research will confirm the view I express to-day as to the nature of the carcinoma cell." In this way he expresses his confidence and zeal, even if he does not equally convince others or take up an attitude less astounding than Hauser's. For him the carcinoma, the very thing he studies the nature of, is itself a parasite. He does not consider adequately the possibility that it may be in some way associated with parasitism and yet itself not be one, and the possibility of the existence of an extrinsically derived parasite or other irritant in it has not so far been disproven even if its real existence and activity are not established. He makes no attempt to indicate what is the biological position or status of the asserted parasitic independent organism, or what is its relative position to known organisms, parasitic or not, or what are its distinctive and diagnostic criteria.

Mr. Butlin takes "no heed" of the remarkable, even sometimes indistinguishable, resemblances between this so-called parasitic independent organism and the nearer normal cells and tissues of the organism in which it first appears, or even in the new growth itself, the origin of which he claims the right to ignore, and he finds in these facts, by a mode of reasoning which I cannot comprehend, grounds for the conclusion that the new growth has not been extrinsically initiated, and is therefore solely of intrinsic origin, while yet he denies confidently that in any way the pre-existing tissue elements of the host had any share in its production. In effect, he really denies for it any material basis either of

intrinsic or extrinsic derivation. As, however, it exists it is not thus explained and some other lines of thought and investigation are demanded.

In the belief that some light may be thrown on parts of this complex problem of comparative pathology I now ask your readers to consider it from the standpoint of a phyto-pathologist and to weigh the comparisons which then are presented to the mind. For this purpose I call attention to two very familiar common galls—namely, the *red spangle* and the *currant gall* of the oak which are so genetically associated that they must be considered together. A *red spangle* begins shortly after a female Spathegaster baccarum, recently hatched from a ripe *currant gall*, has punctured the ventral aspect of an oak leaf early in June and has deposited an egg in the wound in contact with the local cells, including those of the capillary network. The egg hatches, its embryo gradually escapes from the egg-shell as simultaneously the vegetal procambial tissues proliferate, overwhelm and include it, so as to leave the empty egg-shell in the wound, and thus at once sustain and defend the young embryo in a minute mass of almost meristematic cells, the gall plasm. The young gall grows, differentiates, bursts through the under face of the leaf near, and in a regular and constant relationship with the simultaneous development of the embryo, the interests of which it duly provides for, or is fitly related to at every stage. In July it is seen as a more developed hemispherical elevation on the ventral face of the leaf. In August it is like a plano-convex body on a little peduncle and it retains this form with but little change up to its maturity in October when it separates, falls to the ground, and is an automatic tumour.

During the whole period of development of both gall and parasite each part—i.e., the vegetal and the animal—is duly correlated to the other. The structure of the gall so develops as to fit it for the exigences of its fate, which is for a time to live a detached automatic life. Simultaneously also it is fitted for the needs of its parasite; while the structure of the parasite so evolves under these conditions as to fit it for its future fate. The inter-relationship is complete and mutual. So that when in the following February and March, the embryo having passed through its larval and its pupa stages has become an imago it eats a way out of its prison home and becomes a free mature organism, while the gall then withers and dies, after having lived as a detached automatic mass and in a correct sense grown and served all the needs of its parasite during the winter months, having endured all its rigors but having done its duty. The details of these evolutions and mutual correlations we owe to Beyerinck and they are in essentials established.

The so escaped free imago insect, developed under these conditions from an ovum laid by a Spathegaster baccarum, is, however, not like its parent. It is called a Neuroterus lenticularis, being placed by entomologists in a different genus as well as species, although it represents but an alternation of generations. I cannot even suggest at what stage of development the embryo emerging from an egg laid by a Spathegaster is so changed as to become an embryo Neuroterus but the final result is clear. The free Neuroterus lenticularis hatched in March is a parthenogenetic insect and it at once proceeds to lay its ova in the unopened winter buds of an oak. In doing so it wounds a part of the bud axis but its eggs are laid separately between the green leaflets within the bud without causing a wound of, or any observed injury to, the cells of the young leaflet in contact with which the egg is placed and where soon a gall grows. The wound or puncture track in the axis is repaired although in it no gall grows. But very soon after the young leaf cells and tissues which are already somewhat differentiated, proliferate, the gall begins where the egg is laid, it overwhelms the embryo as it then gradually emerges from the egg-shell which is so pushed off, although it remains for some time in contact with the young growing currant gall tissue or plasm, and only there. In this case the *young currant gall plasm* is not quite like that in the wound around an escaping embryo in a *young red spangle;* and is not so nearly like a meristem or a mass of undifferentiated cells. Rather it is produced by a proliferation of the nearer already somewhat differentiated young leaf cells and it is accompanied with a modification of their characters so as rapidly to change those nearest to the hatching embryo and more slowly and less markedly those at a greater distance from it; yet always so as to overwhelm and inclose the whole parasite and it is always in all stages in a strict relationship of fitness to its needs and is such as to evolve a final mechanism suitable for its due nutrition and protection out of the leaflet tissue units, and it is in such harmony with their qualities that the gall itself also can and does live and grow so specifically, and necessarily, in harmony with the vegetative activity of the host as well as with the wants of its parasite, the interdependence being complete. It appears as an obvious currant gall when the buds burst and the shoot develops. The mature gall resulting from these correlated changes in the parasite and the host at length about the first week in June hatches, the imago insect eats its way out, then the gall itself dies and withers, but the escaping insect is not a Neuroterus lenticularis, its parent, or the insect which laid the egg in the winter bud, but it is a bisexual one, a Spathegaster baccarum which promptly proceeds to lay its eggs in an oak leaf and so to determine in it the growth of a *red spangle* which when it hatches in the following spring closes the circuit or completes the alternation of generations.

In this history there is seen obviously enough the "nature" and the "origin" of two organisms, the host and the parasite; and each is or may be classified biologically, the alternate generation notwithstanding. The parasite is not here confused with the response—i.e., the gall; and the mutual interdependent relations of one to the other are shown in a way which distinguishes each of them and explains them; shows for each from the natural selection standpoint the *nature*—that is, the actual natural connexions of each—and the *origin*—that is, the beginning of the series of phenomena and the characters of the succeeding events in relation to each other.

In connexion with the currant galls, and as a postscript to the remarks thereon, I will briefly point out that their death and decay soon after the parasitic imago hatches are not quite constant. The exceptions are instructive and are due to extrinsic agencies of parasitic derivation. Sometimes these galls, and indeed most other galls, are themselves modified by other parasites, or lodgers in them, of which only the latter need now concern us. Early in its life and growth the currant gall is often stung by a species of synergus which lays its eggs in the gall cavity near the larval gall producer. These soon hatch, attack, and devour the said larva; then, changing their food, they attack and consume the soft vegetal gall tissue lining the cavity; and at length settle at several, say, eight or ten, different points of the so enlarged cavity and, continuing their injurious irritation, set up in its walls the growth of as many new differently constructed galls within the original one. Relations of fitness such as have been before spoken of are met with also between the new injurious irritant and the nearer vegetal tissue, so that the new product serves the new parasitic needs while yet it results from the active exertions of the nutritive faculties of the gall tissue itself though it is already an abnormal mass.

In this way is produced a distinct variety of the *currant gall* which does not dry and wither early in June as does a normally hatched gall, but it remains firm, green, and imperforate on the leaves as long as these remain attached to the tree. I cannot say for certain, but I think they do not, like the spangles, ever separate and live a detached or automatic life but throughout the period which has been observed such galls subserve the wants of the new invading parasitic organism which has caused them and directed their development. These varieties of galls are of great interest to anyone who follows the steps of gall evolution and growth, for they make clear the truth that each free synergus embryo acts differently on its environment at different stages of its own development, yet so as always to determine responsive changes in that environment which are conformable to its own progress and fate and can even determine for the vegetal part of such a gall a duration of life and development which is increased beyond the norm for the advantage of the parasitic invader so as to enable it at length to mature and to escape and to reinfect the host; to be, in short, "communicable."

The whole series of events is better studied in the globular rose-leaf galls, but in essentials it is alike in very many galls, perhaps in all. No instances known to me more surely exhibit the direct influence of a free embryo or larva upon the nearest living vegetal tissue, in determining in it a local hyperplasia with a specific metaplasia, and the production of a new growth or tumour with a marked autonomy due to the responses of a local injurious irritation, than do these. In my view they show an inflammation of

the part, for the response is measured by the said injurious irritation, and it certainly both begins and ends with the irritation concurrently. We can see also very well in this process the "*nature*" and the "*origin*" of both the factors engaged in it, as well as their relations to each other; and we are not tempted to ignore either, or to assume a hypothetical origin for either. The gall, even with its contents, is not a parasite, yet it contains one, which is demonstrated and its biological relations are known. The gall, as a whole, is not less certainly known to be at once the product of the responses by the host and of the activities of the parasite.

This teaching, when compared with that given in Mr. Butlin's lecture, contrasts therewith so much in its essentials that it is needless to pursue these points further. The Imperial Cancer Research Committee has, I think, rightly studied the whole problem as a comparative one and has at least in parts of its investigations even dealt with pathological and physiological phenomena in plants, so that I make no apology here for dealing with plant galls in this connexion, even if it be shown that they are not really carcinomata, for it is not shown that therefore they are not in any instructive way so related to them as to be properly excluded from the comparison, which is not a narrow or closed one, seeing that the diagnostic criterion of carcinoma has not yet been given. Mr. Butlin, as a member of the committee referred to, and in the main a supporter of its reports and teachings, I assume would assent to this contention and comparison, even if he holds, as probably he does, that the plant galls are neither inflammations nor tumours, nor so closely related to carcinoma as to be properly brought into the terms of comparison. If so, I can claim that they are, at least in many respects, within the terms of a fair and broad comparative study of tumours and new growths and that they are certainly responses of living organisms to injurious irritation.

THE MANUFACTURE AND SUPPLY OF ELECTROLYTIC DISINFECTANT BY THE PUBLIC HEALTH AUTHORITY.

A GOOD deal has been said and written recently on the subject of the standardisation of disinfectants and it is difficult to accept any other conclusion than that the germicidal efficiency of a given disinfectant preparation should be established by experiment and a guarantee of the result should be presented before the tender for the supply of the disinfectant to the public health authority is accepted. There should be no difficulty in obtaining this guarantee, and it should always be demanded, considering the fact that the business of a disinfectant is to kill effectively germ life, while if it possesses deodorising properties so much the better. If there is a difficulty, or if the question of cost is a serious consideration, the public health authority, as has been demonstrated clearly at Poplar recently, may become its own manufacturer and the method of producing a powerful disinfectant and deodorant by electrolysis lends itself admirably to the purpose. We reproduce a photograph of the electrolysing plant recently installed by the sanitary authorities of the metropolitan borough of Poplar at the instance of their medical officer, Mr. F. W. Alexander. To this gentleman is due a word of congratulation for the perseverance and energy he has shown in successfully initiating a new departure in sanitary administration which will be watched with the greatest interest. It may be stated that so long as the electrolyzed saline solution shows a given strength represented in terms of chlorine no special bacteriological test or guarantee is needed. THE LANCET Special Analytical Sanitary Commission on the Hermite Process of Sewage Treatment by Electricity [1] stated that if the action of an electrolysed salt solution as an antiseptic be compared with carbolic acid "the superior efficiency of the former is so evident even in solutions of relatively great dilution that we are left in no doubt as to which is to be preferred. The only substance used as an antiseptic which operates in solutions of such great dilution is corrosive sublimate, and although the laboratory experiments might appear to give it a certain advantage we are confident that the facility with which it unites with organic bodies and thereby becomes inert would render it very much less efficacious than the Hermite solution for general use as a practical disinfectant. The electrolysed sea water or our 'artificial' Hermite solution appears, indeed, while exerting a specific action on the organisms, at the same time to be used up and destroyed to a much less extent by the organic matter present than any other disinfectant with which we are at present acquainted."

[1] THE LANCET, May 28th, 1904, p. 1321.

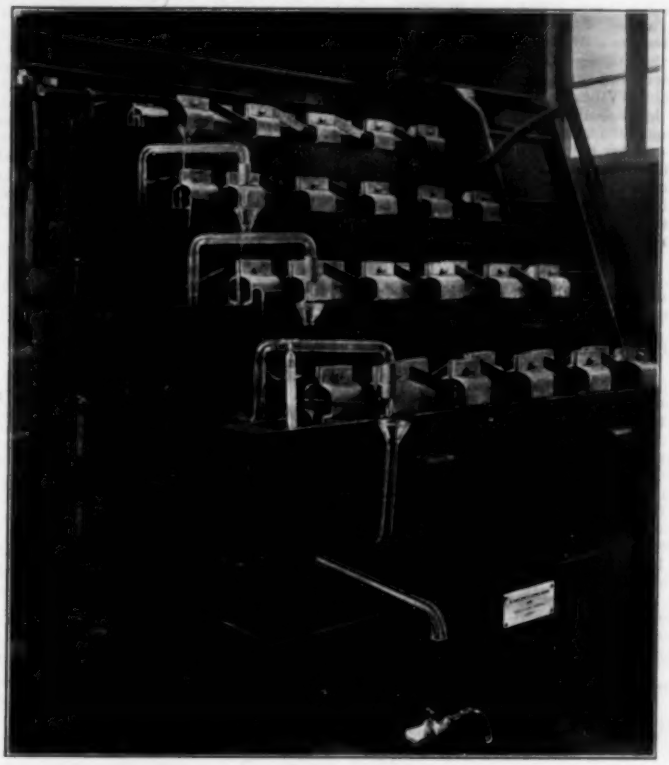
According to the experience with the plant at Poplar such a powerful antiseptic fluid can be produced at the rate of some 185 gallons per eight hours at a total cost of 8*s.* 6*d.*, which is a good deal less than 1*d.* a gallon. As the illustration will show, the plant may be accommodated in quite a small space. The electrolytic cells through which a solution of magnesium chloride and sodium chloride passes are conveniently placed on a staging, forming, so to speak, a cascade of electrolysed saline solution, the strength commencing in the upper cells at 2 grammes of chlorine per litre, increasing to 3 grammes in the cell below this one until it leaves the last cell at about 5 grammes strength. The solution overflows through glass tubes shown in the illustration. All parts of the apparatus are easily reached for cleansing purposes. The current used at Poplar is taken directly from the main; the pressure is 240 volts and the ampèrage through the electrolysers is 15. The rise in temperature is controlled by regulating the rate of flow of the saline fluid through the cells. It is important to guard against an excessive rise of temperature, as the active oxygenated chlorine compounds formed are liable to form new combinations which are bacteriologically inferior. The saline solution flows from a tank situated above the cells. For all practical purposes the strength of the electrolysed solution when first made need never exceed 4 grammes. With certain precautions, as employing bottles of non-actinic glass for containing the fluid and corks soaked in paraffin wax for sealing them, the solution maintains its strength for all requirements. The following results of a number of analyses made from time to time in THE LANCET Laboratory show that the deterioration in strength is practically negligible, especially when it is considered how easily and cheaply the supply can be replenished.

Sample number.	Strength when made, Feb. 13th, 1906.	Strength on March 6th, 1906.	Strength on March 12th, 1906.	Strength on March 19th, 1906.
1*	5·68	5·60	5·60	5·40
2	4·82	4·75	4·70	4·68
3	4·40	4·04	3·97	3·62
4	4·26	4·04	4·00	3·75
5	4·26	3·97	3·90	3·80
6	3·69	3·47	3·46	3·40

* This was made on Feb. 23rd.

The above figures refer to the strength of the solution in terms of available chlorine in grammes per litre. As a matter of fact, the active agent is not chlorine but a mixture of oxygenated chlorine compounds, amongst which may be counted hypochlorous acid. From the number of observations made in the report of THE LANCET Commission already referred to it is probable that the method of estimating the value of electrolysed saline solution in terms of chlorine does not indicate its antiseptic power but that this is really much greater than the amount of chlorine indicated by this method would lead us to expect. In other words, there is probably present a powerful bactericidal agent which is not necessarily indicated by a mere determination of the free chlorine value of the electrolysed fluid. The solution is non-acid, non-corrosive, and non-poisonous. The original intention of M. Hermite was to electrolyse sea-water but it was found that the product was not stable as regards its chlorine efficiency. The substitution of a solution containing chloride of magnesium and chloride of sodium gives much better results, owing probably to the presence of organic matter in sea water which absorbs part of the available chlorine. The electrolysed solution can be diluted to any degree. Lastly, an immense advantage

accrues from the use of electrolysed saline solution for the general purpose of a disinfectant because it is also a remarkably powerful deodorant. The sickly fæcal odour of sewage quickly disappears when it is treated with electrolysed saline solution and the disgusting smells of putrefactive processes are instantly destroyed. Fish offal and bodies in an advanced state of decomposition, as those which have been long submerged in water, are speedily deodorised by the application of electrolysed saline solution. The advantages, in short, of an electrolysed saline solution for the purposes of a disinfectant and deodorant suggest the adoption of this method wherever an electric current is available. At all events, it is clearly demonstrated that a cheap and thoroughly efficient disinfecting fluid may be obtained by this method which entails but little supervision, which works smoothly and continuously, and which yields a perfectly unstinted supply. Incidentally it may be added that the diluted electrolysed saline solution may be used with excellent effect in the watering of roadways and a liberal pouring down the street gullies puts an end to offensive emanations. In times of an epidemic this apparatus should be of the utmost service as the saturators containing the saline solution are always kept charged ready for the electrolyser. The installation at Poplar, which is working with very satisfactory results, was designed by M. Hermite and erected by Messrs. Geipel and Lange of Vulcan Works, 72A, St. Thomas's street, London, S.E., who are M. Hermite's agents in this country.



The Hermite Electrolysing Plant.

MEDICINE AND THE LAW.

The Personator of a Medical Man sent to Penal Servitude.

AT the recent assizes at Warwick a sentence of three years' penal servitude was passed upon a man charged under the name of John Dale Tucker who had been engaged to act as locum-tenent by a medical practitioner under the belief that he was, as he represented himself to be, Dr. William Eldon Tucker, entered in the Medical Register as practising in Bermuda. As locum-tenent the prisoner had filled up a death certificate and had signed it W. E. Tucker, M.B., B.C. Evidence was given by those acquainted with the gentleman entitled to describe himself thus to the effect that the personator was not he, and there was practically no defence, the accused being only able to claim that he had attended medical lectures at Edinburgh and at Glasgow and that he had received certain degrees in 1875 from the University of Philadelphia. Upon this latter subject, which, of course, was not strictly relevant to the charge, the secretary of the Medical Defence Union informed the court that the charter of the University named had been revoked on account of its conferring bogus medical degrees and that since 1880 it had not had authority to grant anything of the kind. After the prisoner had been found guilty other indictments against him were mentioned but were not proceeded with, and an account of his previous performances was given. He had been in the habit of buying and selling medical practices, assuming names of qualified practitioners for the purpose; he had been convicted of fraud in 1904 in connexion with a transaction of this kind, and in 1905 for an offence under the Births and Deaths Registration Act, 1874. The not infrequent occurrence of incidents of this kind makes it incumbent upon medical men selling or buying practices or engaging locum-tenents to exercise considerable care in investigating the claims of those presenting themselves, and gentlemen with whom they may have dealings and whose qualifications are beyond suspicion should be anxious to afford the fullest opportunity for inquiry as to their medical qualifications and their previous history. It is satisfactory to think that J. D. Tucker, who seems to be a specialist in his particular branch of

rascality and who is consequently quite likely to return to it when at liberty to do so, will find himself prevented from imposing upon the medical profession and upon the public until the winter of 1908–09.

"*A Particularly Impudent Impostor.*"

The above description was applied recently by Mr. Paul Taylor to a defendant at the Marylebone police-court, whom he fined in the maximum penalty of £20 upon each of three summonses, with £10 10*s.* costs. The man in question, a foreigner, carried on a bogus medical practice near the Marble Arch under the name of Dr. Muschik, the evidence showing that he used the title of "Dr." freely in signing certificates and prescriptions and in connexion with a pamphlet referring to "Dr. Muschik's Vibrator." The only suggestion in condonation made on his behalf was that he was a German holding foreign diplomas who was not aware that he had to be registered in this country before making use of medical titles. This case did not differ from many others of a similar character but for the nature of the documents which the defendant signed with readiness for Mr. Tyrrell, a gentleman from the office of the solicitor for the Medical Defence Union, who called upon him with a view to test his pretensions. Mr. Tyrrell, who, of course, was in good health, had his pulse felt and his temperature taken by the defendant and replied to various questions as to supposed symptoms and sensations. As a result Muschik, besides giving him a prescription and ordering him to take a bath, certified that he was suffering from fever and that he ought to remain in bed, and advised him to apply for leave of absence from his employment. Three days after his first visit and on a third occasion after the lapse of a fortnight Mr. Tyrrell called again, receiving each time a certificate, based on the alleged presence of fever and enjoining further "rest." The fee asked after the first visit was £5 5*s.* (afterwards reduced to £3 3*s.*, followed by the acceptance of 10*s.* on account) and, according to his statements as well as from appearances, the defendant was carrying on a lucrative trade. Employers who are liable to have certificates presented to them by those in their service when they desire sick leave should feel grateful to the Medical Defence Union and should note with satisfaction that this undesirable alien was said at the police-court to have taken down his brass plate. It was stated that he had had a branch establishment in Hugh-street, Pimlico, and that during part of the year he was in the habit of practising at Harrogate.

FIFTY-FOURTH REPORT OF THE INSPECTORS OF LUNATICS ON THE DISTRICT, CRIMINAL, AND PRIVATE LUNATIC ASYLUMS IN IRELAND, DATED OCTOBER, 1905.

THIS report deals with insanity in Ireland during the year 1904. On Jan. 1st, 1905, the insane in establishments of all kinds numbered 22,996, an increase on the figures for the previous year of 202, which is the smallest increase since 1893. The increase took place in all the institutions except the workhouses, which show a decrease of 340. This growth in the numbers of the registered insane was not due to a greater admission-rate, for the admissions were fewer by 52 than those of the previous year; its cause is dealt with in a separate report which is not further referred to here. The ratio of the insane to the population, including lunatics and idiots and the insane at large as well as those in institutions, was 1 to 178 in 1901, as against 1 to 222 in 1891. The proportion becomes lower the further back we go; in 1851 it stood at 1 to 657. The ratio for England and Wales on Jan. 1st, 1905, was 1 to 285. The proportion of insane under care to 100,000 of the population was 522 in 1904, having risen steadily since 1880 when it was 250.

The statistics of the district asylums naturally claim chief attention; these number 24 and contained on Jan. 1st, 1905, 18,615 of the total 22,996 insane. First admissions into these asylums show a decrease for the past two years, a fact which is pointed to as tending to refute the general opinion that insanity is rapidly increasing in Ireland. The percentage of recoveries on admissions in these asylums was 36·3, the corresponding figure for English county asylums being 36·25. The English average figure for a period of ten years (1895–1904) is 37·27, which is very near the Irish average for the quinquenniad 1898–1902, 36·4. The percentage of deaths on the daily average number resident in these asylums was 7·8, the corresponding English figures being 10·11. In only 286 out of 1449 deaths was the cause verified by post-mortem examination. The inspectors regret that the number of these examinations still continues to decrease. The above figures represent the exceedingly low proportion of about 20 per cent., whereas in English asylums necropsies are performed in over 76 per cent. of the deaths, a percentage which would be higher still were the figures stated for county asylums alone (with which the Irish district asylums compare). Under the conditions obtaining in Ireland very little pathological research work can be looked for. As regards causes of death, a table shows that "consumption" was the cause in 418 of the 1449 deaths, but if deaths from general tuberculosis be added to those from pulmonary tuberculosis the number is raised to 467, or 32·2 per cent., an enormous proportion. For English county and borough asylums the proportion is from 17 to 18 per cent. Tuberculosis is the chief cause of death, after which comes, at a considerable distance, exhaustion from mania or melancholia (152 deaths). Other causes occur with far less frequency. Deaths from general paralysis of the insane are still few but are reported to be increasing proportionately, though this is not borne out by the statistics, which show that the percentage mortality from this disease reckoned upon the total deaths was 4·1 in 1895, 4·4 in 1899, 3·7 in 1901, and 3·1 in 1904. The disease is said to be on the increase in the urban districts. The causes of insanity in the admissions are the usual ones—heredity, previous attacks, and alcoholic excesses heading the list. In the large proportion of 981 of the 3910 admissions to the district asylums the cause is returned as "unknown." This gives a proportion of 25 per cent. of unascertained causation as against 15 to 17 per cent. (according to sex) for pauper patients in England. For this discrepancy there may be adequate reason, but in any case the failure to get at the cause of the attack in one-fourth of the cases is a discouraging feature. The table of causation would be improved if the percentage occurrence of each cause upon the total admissions were given and a like criticism applies to the table of forms of mental disease. Such tables are also rendered more valuable by the plan of calculating the yearly average incidence of a cause or form of insanity for a period of years. Several of the district asylums have a disquieting record from a sanitary point of view, cases of enteric fever, dysentery and diarrhœa, and erysipelas having been numerous.

The criminal insane in Ireland are confined in a State asylum at Dundrum and numbered 159 on Jan. 1st, 1905. As regards the insane in workhouses, their number, as has been stated above, decreased during the year. The number removed from workhouses to asylums has, with few exceptions, increased yearly since 1890, a fact which the report notes with satisfaction. In England the contrary movement, from the asylum to a properly equipped workhouse, is desired for many harmless, senile, and incurable cases. No doubt, as the inspectors remark, such cases require skilled attention, but this ought to be available in an efficient workhouse.

The report next passes to the consideration of the insane who can contribute towards their own maintenance. In Ireland these are accommodated in licensed houses, of which there are 12, in certain endowed institutions called by the somewhat infelicitous title of "lunatic hospitals," four in number, and a certain number are in the district asylums. The number of such private patients in licensed houses and lunatic hospitals on Jan. 1st, 1905, was 794. These numbers have only increased by 172 in the past 24 years. A licence for a private asylum to hold ten patients has recently been granted to the religious order of Bon Sauveur, and amongst existing private institutions are to be noted three—St. John of God, St. Vincent, and Belmont Park—in which the nursing is partly carried out by brothers and sisters of a religious body, a clergyman or the superior or superioress being mentioned under the heading "Proprietor or Superintendent." Presumably a medical man visits each of these institutions. The inspectors record that at one of these, Belmont Park, many of the patients were in shabby clothing at the date of their visit, and it is clear that the law was simply ignored in that statutory books were not kept and statutory returns not made. The inspectors

express themselves in strong terms on the subject, as well they may. At the asylum of St. John of God it would appear, say the inspectors, from the evidence taken in the course of a legal action, that the copies of the reception order and medical certificates sent to their office in the case of a certain patient did not in all respects agree with the original documents where the latter were informal but were made out in accordance with legal requirements. This, said the licensee, was done through a misapprehension. But whilst these things are recorded of institutions under the control of religious organisations—that they are thus controlled we gather from the report—it is but fair to state that at one of the district asylums also, that at Mullingar, the statutory books and records on the female side are simply not kept. "The excuse," say the inspectors, "given by the medical superintendent for this breach of the law is that there is not sufficient medical assistance." The committee, it appears, has refused to appoint a second assistant medical officer. Disregard for the law on the part of authorities and individuals whose duty it is to carry out the same may have ceased to excite interest or to attract attention in Ireland, but to the plain-minded individual who has acquaintance with English and Scottish asylums the above-mentioned derelictions of duty are simply incomprehensible. It is, however, satisfactory to learn that the inspectors find that since they came into office in 1890 a decided improvement has taken place in the condition and management of the lunatic hospitals and private asylums generally, and the detailed reports upon these and the district asylums which are embodied in this volume are on the whole favourable.

METROPOLITAN HOSPITAL SUNDAY FUND.

A SPECIAL general meeting of the constituents of the Metropolitan Hospital Sunday Fund was held in the Mansion House, London, on March 20th, when there were present, amongst others, the Chief Rabbi, Archdeacon Sinclair, Canon Fleming, the Rev. W. H. Harwood, the Rev. C. H. Grundy, the Rev. E. H. Pearce, the Rev. David Anderson, Sir William S. Church, Sir William H. Broadbent, Sir Dyce Duckworth, the Hon. Sydney Holland, Sir Richard B. Martin, Sir Henry Burdett, Mr. Thomas Bryant, Dr. J. G. Glover, and Mr. Wakley.

Canon FLEMING moved—

That inasmuch as there is no definite constitution of the Fund and to obviate difficulties arising in the future the Council be authorised to take such steps as it thinks fit for the incorporation of the Fund by Royal Charter or otherwise.

He said that for more than a quarter of a century his congregation had contributed an average of £1200 a year to the Metropolitan Hospital Sunday Fund and he considered that the honour of proposing the adoption of the motion placed upon him was a tribute to the noble way in which his congregation had responded to the annual appeal on behalf of the sick poor of the metropolis and which had inspired others in a like manner. The Fund had no definite constitution but he did not mean by that that it had no constitution at all. In 1872, when the Fund was about to be inaugurated, certain rules were framed upon which the work of the Fund had been based for the past 34 years. The executive of the Fund had, however, no power to make by-laws, and men who had nobly contributed to the Fund, like Mr. George Herring, who gave about £12,000 a year, had no vote and the object of the motion was to give contributors votes. It was also desirable that members of council should retire by rotation and be eligible for re-election. The fact that during the 34 years of the existence of the Fund it had increased its annual collection from £27,000 to £78,000 in 1905 showed its continuity and that public confidence had grown from year to year. It was desirable that this continuity should be unbroken and that the Fund should be established upon such a basis that no one could question and that would clear away any difficulties that might have existed up to the present time.

The Rev. W. H. HARWOOD seconded the proposition. He said he was in favour of anything that was needful to safeguard the interests of the sick poor of London. The fact that the Fund had hitherto been worked in a satisfactory manner without a definite constitution showed that a bond of unanimity existed between the various members of the council. There was no desire on the part of any member of the council or of any constituent of the Fund to close the door against frank and friendly discussion of the methods adopted in administering the Fund. He was sure the council would make an honest attempt to provide such machinery as would safeguard the noble work of the Fund.

Dr. ADLER (the Chief Rabbi) pointed out that without a legal constitution the acts of a society were regarded as the acts of an individual and he was sure that everyone would agree that the operations of the council of the Metropolitan Hospital Sunday Fund were of such importance that incorporation was really needful.

Sir RICHARD MARTIN said it seemed a great number of years since, at the London Tavern, a meeting was held—Sir Edmund Currie and himself were the only members of that meeting present to-day—to discuss the organisation of a Hospital Fund for London. Since that time the Fund had steadily grown under the vice-chairmanship of Sir Sidney Waterlow, to whom they owed so much, and as one who wished for the continued prosperity of the Fund he thought it necessary that it should have a definite constitution.

The Rev. C. H. GRUNDY, as representing South London, said the congregations on that side of the Thames were heartily in favour of placing the Fund on a basis of greater stability.

The LORD MAYOR then put the motion to the meeting.

A speaker in the body of the meeting wished to incorporate in the motion the words "that the Council be requested to draft a scheme and to report at a future date to the constituents."

The LORD MAYOR said that that was unnecessary as a subsequent meeting would be held at which the draft scheme would be considered.

The speaker said that the proposal expressed the contrary.

Eventually the motion was carried with one dissentient.

On the motion of the Hon. SYDNEY HOLLAND, seconded by Archdeacon SINCLAIR, a vote of thanks was accorded to the Lord Mayor, to which he briefly responded and the meeting terminated.

I-EM-HOTEP.

THE photographs here reproduced are those of a statuette of the Egyptian deity I-em-hotep, in the collection of Signor G. Dattari of Cairo. This god, entitled Imouthes by the Greeks, was by them associated with, or assimilated to, Æsculapius. He was supposed to be

the child of Ptah. This statuette is almost identical with one shown in Plate 50 of Signor Lauzone's "Dizionario di Mitologia Egizia," but is probably of later date, being a work of the last era of the native Egyptian

dynasties or of Ptolemaic times. The god holds in his hands a long papyrus which represents the medical literature of which he was the author, a specimen of which has been published in the celebrated Ebers Papyrus, and a collection of medical treatises are about to be edited from a number of papyri recently acquired by the Berlin Museum which will further illustrate the medical science of ancient Egypt and the doctrines of I-em-hotep. Signor Dattari has kindly permitted the figure to be photographed for publication in THE LANCET.

PORTUGAL OF TO-DAY.

(FROM A CORRESPONDENT.)

I.

As Lisbon has been chosen to be the site of the forthcoming International Congress of Medicine, to be held in April, a description at the present time of a few features of Portugal and its people, specially with reference to the climate, the suitability of the country as a residence for English people, the various watering places and health resorts, and the general conditions of life in this portion of the Peninsula, will be of topical interest. Up to within the last few years comparatively few Englishmen visited this country in spite of the intimate political and commercial relationship that has always existed between the two nations, the climatic and scenic attractions of the country, and the fact that large resident British colonies have existed for over 150 years both in Lisbon and Oporto, the two chief cities of Portugal.

In former days the uncertain and generally rough voyage across the Bay of Biscay in a sailing ship or an indifferently appointed and slow steamer, together with the want of accommodation and travelling facilities in the country itself, combined to deter any but those who had business affairs to attend to from venturing so far out of the beaten track. During the last few years, however, owing to improved facilities for travelling overland and the great increase in number, tonnage, and comfort of the steamers trading between the two countries, the number of English visitors has been rapidly increasing. Considerable numbers come now all through the spring and early summer, while a few remain to take advantage of the mild climate and spend the winter here. Though Portugal possesses many features of historical and scenic interest, and though her people and literature would repay far more study and attention than have hitherto been bestowed on them by Englishmen, it is the object of this article to deal rather with the climate of the country and its chief features of medical interest as a health resort, together with such points of general interest as may appeal to those about to visit the Lisbon Congress in April.

THE CLIMATE AND SCENERY OF PORTUGAL.

The late Baron Forrester, in his "Prize Essay on Portugal," quotes a sentence from a Spanish book dating back as far as 1631, wherein the author says, "Happy would many other countries be if their best spot as to climate were equal to the worst part of Portugal," and there is no doubt that the climate of this part of the Peninsula is, at any rate during many months of the year, mild, equable, and healthy. The weather is, as a rule, either very dry or exceedingly wet according to the season. Thus in summer there may be little or no rainfall for months together, while during the two or three months which go to make up the short southern winter (December to February) the country is drenched perhaps for days together by violent, almost tropical, downpours. Compared with Great Britain the seasons in Portugal are very much more certain and reliable. The most agreeable times of the year in this country are during spring and early summer, from March to the end of June, and again from October to the middle of December. During both these seasons the weather may generally be relied on to be, on the whole, fine, sunny, and warm. During the height of summer the climate is for most people unpleasantly hot and the country gets very dry and burnt up, and would hardly appeal to those in search of a refreshing change. The winter in Portugal is always very mild and open, especially near the coast. From the end of October till the middle or end of December there is generally a long spell of almost unbroken and brilliantly fine weather, a cloudless sky, and cool bracing breeze. Even in the middle of winter one gets intervals between the storms of rain of almost perfect weather, lasting often for days or a week together. Near the coast snow is practically unknown and the thermometer rarely descends below freezing point. Thus at Oporto during the eight years from 1893-1900 the average daily minimum temperature in December and January was 11·7° and 9° C. respectively. Farther south the winters are even more mild and perhaps less stormy and there is a considerable difference between the winter at Lisbon, Cascaes, and Mont Estoril, and the same season at Granja, Oporto, or further north still. Inland, where the country is for the most part hilly, the winter is much drier, and although it can hardly be called very cold compared with countries farther north the air is very keen at times and the higher mountains are covered with snow more or less through the winter. The highest mountain in Portugal, the Sierra d'Estrella, is over 6500 feet high and there are many others in the north and east of the country that run from 3000 to 4000 feet above sea level. During spring and autumn the fine, dry, bracing air in these mountainous districts together with the settled sunny weather, go to form a climate which is perhaps as fine as any in Europe. On the whole, then, the climate of Portugal may be said to be very healthy and pleasant from October to June, the sea coast being preferable in the winter months and inland places in autumn and spring, and for those who from choice or necessity wish to avoid the severity of the northern winter and spring the country is well worth consideration.

The scenery in Portugal is for the most part interesting and in many places remarkably beautiful. The coast is composed chiefly of low sandhills covered with pine trees. Inland the steep, round-topped, heather-covered hills and shallow rapid streams suggest rather the Scottish Highlands, especially the central and northern districts, while such places as Cintra and Bussaco are now well known as affording scenery as beautiful as any in Europe. The country is for the most part extremely fertile and the warm rains and hot sun cause a luxuriance of vegetation and flowers such as less favoured countries can never hope to obtain. Portugal is a great place for flowers and an idea of the mild open nature of the winter there may be gleaned from the fact that camellias blossom profusely in the open air all through the colder months, roses bloom nearly all the year round, while rhododendrons and a wealth of spring flowers are in full flower from the beginning of March.

The south of Portugal, the provinces of Alemtejo and the Algarve, differs very much from the north, being much less mountainous and much hotter. Indeed, the climate in the extreme south resembles more that of Algiers and Northern Africa than that of a European country. The people, too, of the south differ a good deal from those of the north. The whole country south of the Tagus was for some 400 years in the Middle Ages entirely dominated by the Moors, and though the country bears throughout signs, both in the way of buildings and customs, of Moorish influence, these are far more prominent where the Mohammedan power was most absolute and longest sustained.

The countrymen of Central and Northern Portugal are more nearly allied to the inhabitants of Northern Spain, Leon and the Asturias. They are for the most part hard-working, quiet, and pleasant people to deal with. They are mostly very poor, quite illiterate, and ignorant of everything outside their immediate district. Large numbers emigrate every year to the Brazils, where they earn more money and where they all hope to make fortunes. The women of the north are most of them tall handsome women and owing to the habit of always carrying things upon their heads they acquire a grace of figure and carriage that is particularly striking. Their costumes are very bright and picturesque, each district having a distinctive dress. Their savings are all invested in pure gold ornaments, such as earrings, brooches, lockets, and chains, all of a colossal size, and the amount of almost barbaric splendour in the shape of 24-carat gold that a Portuguese countrywoman will display on a fair-day is something astonishing.

On the whole the traveller in Portugal will find much that is of interest alike in the people, their customs and buildings, and in the country itself. Good hotels are, however, few and far between and anyone wishing to get off the beaten track must expect to have to rough it, but if he

chooses the right time of year the fine scenery and genial climate will make up for a good deal. A naturalist would find much that is of interest and an artist would find that any trifling discomfort was more than compensated by a visit to what is one of the most beautiful and picturesque countries in the whole of Europe.

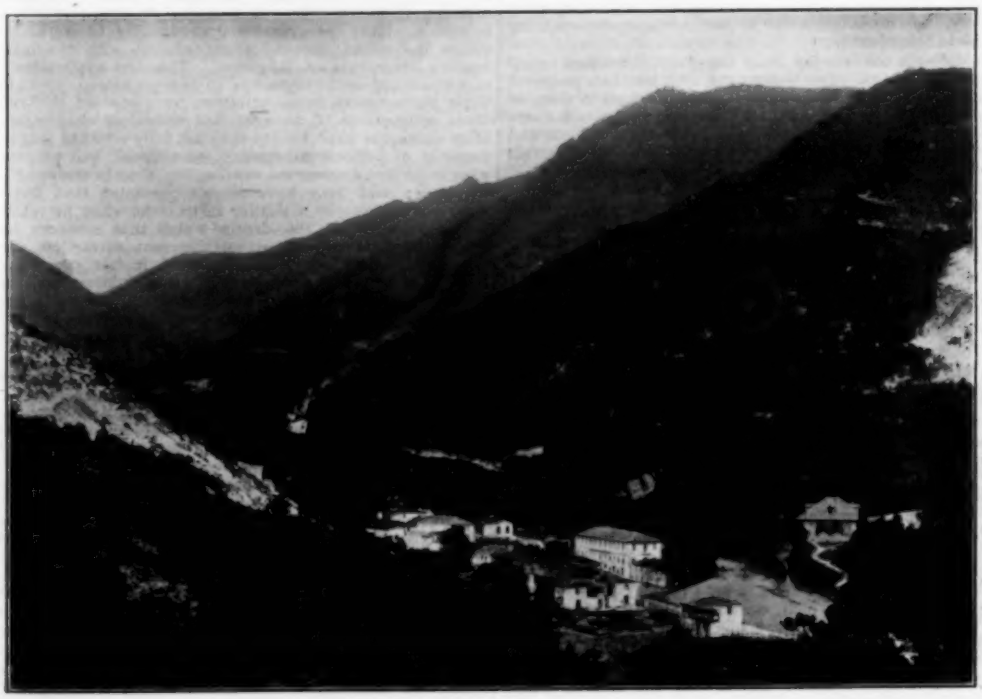
WATERING PLACES IN PORTUGAL.

The fact that Portugal is peculiarly rich in medicinal springs and baths of considerable and undoubted therapeutic value may be said practically to have escaped the notice hitherto of the medical profession outside the country. Partly owing to the greater distance from England and partly, perhaps, owing to the lack in Portugal of that enterprise in advertising which is so noticeable in some other countries, many health resort in this country are practically unknown, some of which as regards climate, scenery, baths, and waters are perhaps as valuable as any in Europe. Until recently the accommodation to be obtained at many of these places was very poor, but of late years fairly good hotels have been built at a number of them and at the same time improved travelling facilities have rendered them far more easily accessible than hitherto. Patients visiting Portuguese watering places will not find the same amount of luxury or as many amusements provided for them as perhaps they might get in more fashionable and better known health resorts, but they will be sure of attention and politeness everywhere, and the interests of new surroundings, fresh people, and the natural beauties of scenery which many of these places afford should at least be sufficient to prevent ennui if not actively to amuse. There are two points which I venture to think are specially worth bringing to the notice of the medical profession in England in respect to Portuguese watering places. One is that the climate is much warmer in spring and early summer than that of Northern Europe, which renders the country peculiarly suitable for many cases of rheumatism and other diseases at this time of year. The other is that a visit to a Portuguese watering place is not an expensive luxury and would be found well within the compass of a very large number of people to whom a visit to a more fashionable and

FIG. 1.

Countrywoman of North of Portugal in characteristic costume.

FIG. 2.



General view of Geres.

expensive resort would be difficult or impracticable. As regards language a knowledge of French will carry one a long way, and wherever the traveller goes he is sure to meet with an attention to his requirements and an amount of politeness among all classes that are as refreshing as they are perhaps unexpected.

In this article it is, of course, impossible to describe in detail the natural resources of the country in springs and baths, and a mere mention of the names of a few of the better known resorts, together with the nature of the waters and baths to be found at them, must suffice. The medicinal waters of Portugal may practically be divided into two classes, those charged with sulphur and the alkaline. A few contain iron but they are unimportant. Large numbers of Portuguese visit the various spas in summer, completing the "cure" when possible by a course of sea-bathing at one of the many places along the coast during August and September. The following are a few of the better known resorts in the country. The season at all of them begins about the beginning of May, when the hotels, at which accommodation is mostly fairly good though plain, generally open.

Gerez is situated in the north-east of Portugal, about four hours' drive from Braga, the chief town in the north. The village is about 700 feet above sea level and lies in a valley among mountains running up to over 4000 feet in height. The waters are strongly alkaline and issue at a temperature of about 45° C. (nearly 113° F.). They have a great reputation for the cure of digestive disorders and more particularly for cases of functional derangements and disorders of the liver. There is no doubt that they are particularly efficacious in cases of chronic gastro-intestinal catarrh and enlarged torpid liver in those inclined to over-indulgence and sedentary lives and in the congested condition of the liver and digestive organs generally, so often found in those who have lived much in tropical climates. A considerable number of Portuguese who have spent some years in the Brazils derive remarkable benefit from a visit to Gerez. The arrangements for drinking the waters and for taking the baths are well carried out and great care is ordained in the way of diet during a "cure," as certain articles of food are found to set up a great deal of internal derangement while a course of waters is being taken. The action of the water is similar to that of the waters at Carlsbad and their undoubted efficacy, together with the bracing air and interesting scenery, have made Gerez one of the most popular watering places in this country.

Caldellas is not very far from Gerez and about two hours' drive from Braga. The waters are alkaline, less powerful than those of Gerez, and are much in vogue here in cases of atonic dyspepsia and sluggish liver, while the baths are found of considerable value in cases of chronic eczema and other skin affections. The scenery is very pretty, the air bracing, and the hotels fairly good.

Entre-os-Rios is a small place some 30 miles from Oporto at the junction of the Douro with its chief tributary the Tamega. The waters are both sulphuretted and alkaline and in addition to the various forms of "arthritism" special attention is paid to the treatment of chronic diseases of the throat and bronchial tract resulting from a gouty or rheumatic diathesis. Great improvements have recently been made in the appliances for douches, sprays, and baths and a new hotel has been built for the use of those undergoing a cure.

Vizella is a small town about two hours by rail from Oporto, situated amidst particularly beautiful surroundings and much frequented on account of its sulphur waters by cases of gout, rheumatism, obesity, and skin affections. Being shut in by mountains it is well sheltered and gets very hot in summer. Spring and autumn are the best times to visit it and owing to its warm situation and the valuable baths cases of rheumatism certainly derive great benefit from the treatment there adopted.

Luso, which possesses alkaline waters and baths largely resorted to for the treatment of chronic gout and rheumatism, is of special interest as it is within half an hour's drive of Bussaco, where there is an excellent hotel open all the year round and which, on account of its magnificent scenery and historic interest, is one of the places most worth visiting in the whole of Portugal.

Caldas da Rainha, close to Lisbon and with both alkaline and sulphuretted waters; Cucos, near the former, where rheumatic patients are treated by mud baths and alkaline waters; Pedras Salzadas, Moledo, Vidago, and others where alkaline waters are found,—all these one can only just mention here, while there are very many others, some with fairly good hotels, some without, but all of them possessing medicinal springs of more or less value and of great local reputation.

The above notes, though sketchy and of necessity very incomplete, may give some idea of the richness of the country in watering places and indicate the class of case which is likely to be benefited by a visit to one of them.

(To be continued.)

Looking Back.

FROM

THE LANCET, *SATURDAY*, March 22nd, 1828.

IMPORTANT DISCOVERY.

IT is confidently asserted that two distinguished philosophers, operating in concert, have ultimately succeeded in contriving an instrument that is capable of detecting the secret operations of the mind by auscultation; and which, in their perverted knowledge of the Greek, they have termed an intellectual stethoscope. The complicated construction of this instrument has not yet been developed; but we learn that some trials are shortly to be made of its stupendous effects, at a Sunday evening medical conversazione. Thought is either the silent inhabitant of the brain, or becomes promulgated by language, which renders it intelligible. This is sufficiently obvious; but the aim of the intellectual stethoscope is to seize the thought in its nidus, either at the instant it is hatched, or before it becomes fledged by speech, and wings its vibrations on the ear. There is a vulgar phrase, that a man endeavours to suck his neighbour's brains; but this was always effected through the medium of verbal articulation,—by picking up a hint, draining an allusion, insidious cross-examination, or precipitating an inference. Here the operator goes directly to work, and elicits the naked thought unencumbered with the meretricious ornaments of language. The first application of this wonderful contrivance was to persons asleep, by which these philosophers, by auscultation, were enabled to detect those whisperings of thought that constitute dreams, and after numerous experiments they are fully satisfied that the majority of persons are much more rational, and pregnant with important discoveries, when asleep, than in their waking moments; and they have piously presumed that Daniel must have employed a similar instrument when he related to Nebuchadnezzar the dream which that monarch had forgotten. This process of somniloquent extraction, it is rumoured, they first practised on their fair spouses, or occasional sleeping partners; but the information thus obtained soon induced them to discontinue these attempts on the ladies. The intelligence procured was frequently of an alarming nature, and excited jealousies and apprehensions of infidelity.

In the next instance, they began to practise on each other with their eyes open, but the materials were deficient for a fair experiment. The brain of neither had ever conceived an original thought, launched forth a sally of wit, or courted a candid or legitimate conclusion. In this mutual barter of opinion, the old adage, that exchange is no robbery, was completely verified: after repeated trials they only extracted improbable conjectures, mutilated assumptions, the coarse materials of lying and slandering, envy, hatred, malice and all uncharitableness. Thus the native barrenness of both will compel them to wriggle into medical societies, professional conversazioni, and, if the intrusion be permitted, into the company of gentlemen, that they may glean the thoughts of others, and unblushingly appropriate them as the emanations of their own genius.

The contrivers of this instrument are said to be a Dr. James Johnson, the fabricator and vendor of some splintered fasciculi, and a Gothic Editor, the last of the gazetteers.

THE INTERNATIONAL CONGRESS OF MEDICINE AT LISBON.

A MEETING of the National Committee for Great Britain and Ireland of the Fifteenth International Congress of Medicine was held at the Medical Society's rooms, 10A, Chandos-street, London, W., on March 13th. Dr. Frederick W. Pavy, the President, was in the chair, and there were also present Sir Thomas Barlow, Bart., Sir Dyce Duckworth, Dr. David Ferrier, Deputy Inspector-General A. J. J. Johnston, R.N., Colonel Arthur T. Sloggett, R.A.M.C., C.M.G., Dr. H. Radcliffe Crocker, Mr. W. H. H. Jessop, Dr. Boyd B. Joll, Mr. L. E. Creasy, and the honorary secretaries, Dr. Clive Riviere and Mr. D'Arcy Power. The honorary secretaries reported that the railway companies had made important reductions to members who intended to travel overland to Lisbon to attend the Congress; further particulars will be found on p. 847 of our present issue. It was also stated that the Visconde de Monserrate (Sir Francis L. Cook, Bart.) had kindly offered to give a garden party on April 20th. The British Association at Oporto has invited 20 members to dine in the Factory house on April 25th and they will also extend hospitality to other members. A communication was read from the German National Committee containing two proposals which the German National Committee was submitting for the consideration of the various national committees. The proposals were as follows:—

1. An international bureau should be established which should continue in activity in the intervals between the meetings. The bureau should consist of the presidencies of the previous and of the future Congresses and of the presidencies of the several national committees. The headquarters of the bureau should be in Paris. Its business should be to maintain the continuity of the Congress and to coöperate with the organising committee in the arrangement of the programme as far as concerns the division into sections and the choice of themes, of reporters, honorary presidents, &c.

2. In future the International Medical Congress should be held, not as hitherto every three, but every five years. It is considered that the holding of meetings at longer intervals would not only make more careful preparation possible, but would encourage the devotion of greater energy and zeal to the solution of scientific problems by such authors who now have lost their interest for the meetings owing to their too frequent recurrence. Moreover, less frequent meetings would make the choice of a place of meeting easier.

These propositions were approved after some discussion but it was thought that the headquarters of the bureau should be in Brussels rather than in Paris. The British Committee was not prepared to make any suggestion as to the place of meeting of the Sixteenth International Congress of Medicine. It was suggested that delegates going to the Congress should take academic costume. The proceedings ended with a hearty vote of thanks to the Medical Society for the use of the rooms.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8476 births and 4909 deaths were registered during the week ending March 17th. The annual rate of mortality in these towns, which had been 17·3, 17·4, and 16·7 per 1000 in the three preceding weeks, further declined to 16·2 per 1000 last week. In London the death-rate was 16·5 per 1000, while it averaged 16·0 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 5·9 in Burton-on-Trent, 6·5 in King's Norton, 7·0 in Aston Manor, 8·7 in Ipswich, 9·2 in Tottenham, 9·4 in Barrow-in-Furness, 9·6 in Hornsey, and 9·8 in Warrington; the highest rates were 20 6 in Bradford and in Sunderland, 20·7 in Wolverhampton, 20·8 in Bournemouth, in Norwich, and in Middlesbrough, 21·2 in Liverpool, 21·7 in St. Helens, 22·0 in Hanley, and 23·2 in Wigan. The 4909 deaths in these towns included 435 which were referred to the principal infectious diseases, against 388, 420, and 469 in the three preceding weeks; of these 435 deaths 150 resulted from measles, 116 from whooping-cough, 64 from diphtheria, 44 from diarrhœa, 39 from scarlet fever, 19 from "fever" (principally enteric), and one from small-pox. No death from any of these diseases was registered last week in Bournemouth, Ipswich, Great Yarmouth, Hanley, Burton-on-Trent, King's Norton, Coventry, Wallasey, Wigan, Warrington, Barrow-in-Furness, or Stockton-on-Tees; while they caused the highest death-rates in West Ham, Plymouth, Handsworth (Staffs), West Bromwich, Smethwick, Liverpool, Bury, Newcastle-on-Tyne, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in Croydon, West Ham, Liverpool, Bury, Manchester, Preston, York, Newcastle-on-Tyne, and Swansea; from scarlet fever in Birkenhead; from diphtheria in Coventry, St. Helens, Hull, Middlesbrough, and Merthyr Tydfil; from whooping-cough in Plymouth, Handsworth (Staffs), West Bromwich, Smethwick, Stockport, Liverpool, Rotherham, Sunderland, Cardiff, and Rhondda; and from diarrhœa in Reading. The mortality from "fever" showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Plymouth but none in any other of the 76 towns. The number of small-pox patients in the Metropolitan Asylums Hospitals, which had been six on each of the two preceding Saturdays, increased to seven on Saturday last, the 17th inst.; one new case was admitted during the week, against three, one, and one in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital at the end of last week was 2485, against 2689, 2628, and 2545 at the end of the three preceding weeks; 252 new cases were admitted during the week, against 274, 273, and 268 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 328, 343, and 314 in the three preceding weeks, rose again to 334 last week, but were 38 below the corrected average number in the corresponding periods of the four preceding years. The causes of 41, or 0·8 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Salford, Leeds, Hull, and 49 other smaller towns, while the largest proportions of uncertified deaths were registered in Hanley, Birmingham, Nottingham, Liverpool, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 19·6, 19·3, and 18·2 per 1000 in the three preceding weeks, rose again to 19·3 per 1000 during the week ending March 17th, and was 3·1 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 13·9 in Leith and 15·1 in Perth, to 21·6 in Paisley and 24·7 in Dundee. The 661 deaths in these towns last week included 37 which were referred to measles, 20 to diarrhœa, eight to diphtheria, seven to scarlet fever, six to whooping-cough, and three to "fever." In all, 81 deaths resulted from these principal infectious diseases last week, against 54, 61, and 57 in the three preceding weeks. These 81 deaths were equal to an annual rate of 2·4 per 1000, which was 1·0 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 28, 26, and 23 in the three preceding weeks, rose again to 37 last week, and included 18 in Glasgow, eight in Dundee, eight in Paisley, and three in Edinburgh. The deaths from diarrhœa, which had been five, 14, and seven in the three preceding weeks, rose again last week to 20, of which 12 occurred in Glasgow, three in Aberdeen, and two in Edinburgh. The fatal cases of diphtheria, which had been two, six, and 11 in the three preceding weeks, declined again to eight last week, and included five in Glasgow and two in Dundee. The deaths from scarlet fever, which had been two in each of the two preceding weeks, increased last week to seven, of which two were registered in Dundee and two in Leith. The fatal cases of whooping-cough, which had been ten in each of the three preceding weeks, declined to six last week and included five in Glasgow. The deaths from "fever," which had been six, three, and four in the three preceding weeks, declined again last week to three, all of which occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 125, 153, and 125 in the three preceding weeks, were again 125 last week, and were 15 below the number in the corresponding period of last year. The causes of 20, or more than 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 24·4, 24·8,

and 24·6 per 1000 in the three preceding weeks, further declined to 23·1 per 1000 during the week ending March 17th. During the past four weeks the death-rate has averaged 24·2 per 1000, the rates during the same period being 16·7 in London and 17·2 in Edinburgh. The 168 deaths of persons belonging to Dublin registered during the week under notice were 11 fewer than the number in the preceding week and included ten which were referred to the principal infectious diseases, against six in each of the three preceding weeks; of these, four resulted from "fever," three from diarrhœa, two from whooping-cough, and one from diphtheria, but not any from small-pox, measles, or scarlet fever. These ten deaths were equal to an annual rate of 1·4 per 1000, the death-rates last week from the principal infectious diseases being 1·4 in London and 0·8 in Edinburgh. The fatal cases of "fever," which had been one, one, and none in the three preceding weeks, increased last week to four. The three deaths from diarrhœa corresponded with the number in the preceding week. The fatal cases of whooping-cough, which had been one, four, and one in the three preceding weeks, rose again last week to two. The 168 deaths in Dublin last week included 37 of children under one year of age and 48 of persons aged 60 years and upwards; the deaths of infants considerably exceeded the number in the preceding week while those of elderly persons showed a marked decline. One death from violence and five inquest cases were registered; and 63, or three-eighths, of the deaths occurred in public institutions. The causes of seven, or more than 4 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: — Deputy Inspector-General A. J. Johnston to the *President*, additional, to represent the Admiralty at the International Congress of Medicine. Fleet Surgeon G. G. Borrett, to the *Mars*, on commissioning. Surgeons: M. T. Male to the *Russell* (lent) and N. H. Mummery to the *Victory*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

Captain Thomas C. MacKenzie, D.S.O., is seconded for service with the Egyptian Army (dated March 1st, 1906). Lieutenant-Colonel W. G. Macpherson, C.M.G., is granted the next higher rate of pay of his rank.

ROYAL NAVAL VOLUNTEER RESERVE.

The undermentioned gentlemen have been appointed Surgeons, viz.:—Henry Gordon Campbell and John Martin Bickerton (dated March 14th, 1906).

DEATHS IN THE SERVICES.

Staff-Surgeon Alworth Edward Merewether, R.N., at Simon's Bay, Cape Colony, recently, at the age of 36 years. The deceased was serving on the *Crescent* flagship of Rear-Admiral C. B. Durnford. He received his medical education at the London Hospital and the University of Durham. He qualified M.R.C.S. Eng., L.R.C.P. Lond., in 1892 and graduated M.D. (with honours) and B.S. Durh. in 1894. He was formerly assistant demonstrator of anatomy at Newcastle-on-Tyne School of Medicine. He joined the Royal Navy in May, 1896, and was promoted to be staff-surgeon in May, 1904. He was appointed to the *Crescent* in February, 1904, when that vessel was commissioned to replace the *Gibraltar* as flagship on the Cape of Good Hope station.

Surgeon General John Lumsdaine, I.M.S. (retired), on March 11th, at his residence, Weston-super-Mare, aged 79 years. He had a distinguished career. Shortly after joining the army as assistant surgeon he served in a boat expedition against El Khatiff, in the Persian Gulf, and was present at the capture and burning of a pirate bungalow in November, 1854. Afterwards he saw service in the 1st Bombay Horse Artillery during the campaign in Central India in 1857–58–59, under Sir Hugh Rose (afterwards Lord Strathnairn); he was present at the siege and capture of Ratghur, the action of Barodea, the relief of Sangor, the forcing of the Muddenpore Pass, the siege and capture of Jhansi, the battle of Betwa, where he was wounded, at the battle of Khoonch, the actions of Muttra and Deopora, the battle of Golowlee, the capture of Calpee and pursuit to Surceele, the advance on Gwalior, and the battle of Morar. He was wounded at the taking of the cantonments. He was also present at the capture of Gwalior, at the final pursuit of the enemy, and at the battle of Jowra-Alipore (specially mentioned in despatches, medal, and clasp). The deceased was with the Abyssinian Expedition in 1867–68 as member of the reconnoitring committee and sanitary officer and was afterwards on the personal staff of the Commander-in-Chief, Sir Robert Napier, subsequently Lord Napier of Magdala (medal, specially mentioned in despatches, and promoted to substantive rank of surgeon-major for "valuable services in the field"). Surgeon-General Lumsdaine had resided for some years at Weston-super-Mare where he was highly esteemed.

THE DEBATE ON THE ARMY ESTIMATES.

Mr. Haldane's first speech in the House of Commons explanatory of the Army Estimates had two great merits—namely, that of having set forth the views which had commended themselves to his own judgment in a spirit of open-minded candour, and secondly, that of having tried to lift the consideration of the subject of our future military policy out of the rut of party politics into another and higher plane. It was at once recognised that the new Secretary of State for War was prepared to deal with a subject of the gravest importance and of the most difficult nature in an eminently fair, comprehensive, and statesmanlike way, and that he had given indications of his courage, common-sense, and business aptitude by the spirit and method in which he had gone to work. Since the delivery of that prefatory speech the Army Estimates have been fully and very ably discussed on all sides of the House of Commons in committee of supply and the War Minister has had the opportunity of amplifying his original statement. Altogether, apart from any Government measures some other schemes have also been put forward dealing with this question of our unpreparedness for war—notably that of Lord Roberts and the *Spectator* experiment in militia training for practically testing Colonel Pollock's scheme. The present time would consequently seem to afford a fitting occasion for considering this question also from a medical standpoint, but no allusion has been made in the course of the discussion to its having any possible bearing in this respect. In these days, however, when so much is being said and written about the alleged physical degeneration of the race, the proposal of Lord Roberts, for example, for training the youth of the nation as part of their school course, and those changes which are foreshadowed by Mr. Haldane as forming the probable basis of what is to be our future army organisation, are in reality intimately connected with questions of public health. They not only concern the civil population generally but have a direct bearing upon the question of what is to be the medical and sanitary provision for the army in the case of any future campaign in order to fulfil the requirements of modern war. There is nothing to complain of in the form of the army debate; the subject of our army policy and military organisation seems to have been discussed in a serious and business-like manner. As to Mr. Haldane's method of procedure, we would point out that he has striven to maintain continuity and very wisely has had recourse to the Defence Committee, the Army Council, and the Admiralty for aid and advice and that these bodies have been acting, as they were surely intended to do, in co-relation and coöperation with one another. Mr. Haldane asks for time to formulate his scheme and very properly refuses to be pressed. The main question is the vexed one of how best to provide for the expansion of our strength outside the limits of our regular army. It would be impossible, however, within the space at our disposal, as well as premature and scarcely within our province as medical journalists, to analyse and to discuss Mr. Haldane's tentative and provisional programme.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

This journal fully maintains its position with regard to the quality and scientific tone of its articles. Those in the March number seem to be unusually instructive and good. We may call attention to the following as having specially interested us: The Medical Organisation of the Japanese Army, by Lieutenant-Colonel W. G. Macpherson, C.M.G., R.A.M.C.; Hygiene and Preventive Medicine in 1905, by Lieutenant Colonel R. H. Firth, R.A.M.C.; the Operative Treatment of Fractures, introducing some original methods of union of bone by simple mechanical means, by Lieutenant R. Grenville Anderson, R.A.M.C.; the exhaustive and

carefully prepared editorial contribution on Malta Fever; and the medical service of the Italian army (translation).

Lieutenant-Colonel H. H. R. Charles, I.M.S., surgeon to the Prince of Wales in India, has, on the completion of the Prince's tour in the Indian Empire, been invested by His Royal Highness on behalf of His Majesty the King with a Knight Commandership of the Royal Victorian Order.

Correspondence.

"Audi alteram partem."

THE DISTRIBUTION OF MALTA FEVER (WITH AN ACCOUNT OF A CASE OF A MIXED INFECTION OF ENTERIC AND MALTA FEVERS).

To the Editors of THE LANCET.

SIRS,—Having been on leave of absence it was only on my return to Malta last week that my attention was drawn to a letter in THE LANCET of Feb. 10th written by Dr. Llewellyn Phillips under the above heading. I should feel obliged if you will allow me to make a few observations with reference to his remarks on the case of mixed infection. Dr. Phillips says: "The case is of interest as being one of a double infection with the microbes of enteric and Malta fevers and is, I believe, the first to be put on record with a definite proof by serum diagnosis. ....." I would refer Dr. Phillips to the *Journal of the Royal Army Medical Corps* for March, 1905, in which I published a paper entitled "A Case of Double and Simultaneous Infection by the Organisms of Enteric and of Malta Fever." This paper was read before the Mediterranean branch of the British Medical Association at Malta on Jan. 2nd, 1905, and the agenda of this meeting appeared in the *British Medical Journal* a few weeks later.

My case occurred in November, 1904, and died after being in hospital nine days. Death was caused by perforation and at the post-mortem examination all the typical lesions of enteric fever were found. The presence of the Malta fever infection was found only after cultures had been made from the spleen, from which both bacillus typhosus and micrococcus Melitensis were isolated. There was no agglutinative reaction to micrococcus Melitensis on the one day on which the blood was examined. With your permission I shall quote the first and the concluding paragraphs of my paper:—

> It has long been discussed whether it is possible to have a simultaneous infection by bacillus typhosus and by micrococcus Melitensis. Undoubted cases have occurred where one disease has followed so closely on the other as to make one suspect that the infection was simultaneous; in these cases the blood serum reacts first to one disease and then to the other. In other cases the blood serum is said to react to both diseases from the first, but, so far as I am aware, there is no record of this being confirmed by post-mortem examination. I am now able to place on record a case in which both organisms were obtained from the spleen after death. ..... I do not apologise for bringing this case to notice, because apart from the fact that I believe it to be the first time that the two organisms have been isolated from the same spleen I consider that it is extremely important to recognise that the two diseases may exist together, especially in view of the treatment. In such cases the serum diagnosis is not absolutely to be relied on, and it is quite possible to imagine a case treated as Malta fever in which the enteric may have been masked until it evidences itself by the fatal results of a too liberal diet.

It is not uncommon for us to get cases of mixed infection in Malta and two of the cases which came under my own care last year illustrate two aspects of the question.

CASE 1.—A private in the Rifle Brigade, admitted on May 30th, 1905, on the seventh day of illness, passed through a typical attack of enteric fever; his temperature became normal on the twenty-ninth day. The blood serum reacted completely to enteric fever in a dilution of 1 in 50 and not at all to Malta fever in a dilution of 1 in 10. He had slight rises of temperature on the thirty-seventh and thirty-eighth days and on the forty-first and forty-second days his temperature reached 102° F. The serum reaction remained the same. On the fifty-second day the temperature rose suddenly to 103° but immediately fell again; on the fifty-sixth and fifty-seventh days it began a steady rise and on the sixty-first day reached 105°. The serum now gave the following reaction: immediate and complete to Malta fever and incomplete to enteric fever in a dilution of 1 in 10; time limit, a quarter of an hour. The fever continued till the seventy-third day and another relapse started on the eighty-second day, continuing in an intermittent way until the 106th day, when he was invalided home.

CASE 2.—A corporal in the Rifle Brigade was under treatment for Malta fever from Sept. 29th, 1904, to March 17th, 1905. For the last month he had suffered from orchitis—a common sequel. On March 27th he was readmitted to hospital with fever (104° F.) and nothing in his symptoms to give me reason to suppose that it was not an ordinary relapse of Malta fever. On examining his blood, however, I found that the reaction to Malta fever had disappeared and that a slight reaction to enteric fever was present. I examined the blood several times and got the same result on each occasion. I even drew off five cubic centimetres from the median basilic vein for the purposes of culture but found it sterile. Some doubtful spots appeared about the eighth day after admission and slight diarrhœa on the tenth, eleventh, and twelfth days. The temperature became normal on the twenty-ninth day and remained there until his discharge from hospital.

It will therefore readily be understood that for medical officers in Malta (knowing that these cases constantly occur) the question of mixed infection is very important. At times and for the purposes of treatment a confident diagnosis of either disease alone or of a mixture of the two becomes of critical importance. The subject is of intense interest both to bacteriologists and to clinicians and could be enlarged on very greatly. This must be my excuse for this long letter.

I am, Sirs, yours faithfully,

J. CRAWFORD KENNEDY,
Captain, R.A.M.C.; Member of the Mediterranean Fever Commission.

Malta, March 12th, 1906.

FATAL BLOOD POISONING FOLLOWING A WOUND BY THE PRIMULA OBCONICA.

To the Editors of THE LANCET.

SIRS,—The patient, a woman aged 29 years, was recovering from an attack of influenza when she accidentally scratched her nose whilst smelling at a plant of the variety referred to. The nose rapidly swelled up, became a deep plum colour, with many points of suppuration similar in appearance to a carbuncle. Under an anæsthetic the diseased portions of the nose were scraped away. Œdema of both eyelids followed, the same destructive process taking place in the soft tissues, a diffuse cellulitis of the forehead and scalp then supervened, and despite incisions continued to spread. No discharge came from the wounds. The patient died at the end of the week with symptoms of pneumonia. At the post-mortem examination acute congestion of both lungs with many foci of suppuration were found. Cultivations discovered the streptococci and staphylococci present. This is the third case of acute inflammation of the skin and subcutaneous tissues I have met with after infection by the primula obconica. Two died and one recovered after a very prolonged illness. These infections were all on the face. I learn that a species of eczema of the hands often affects gardeners when tending this plant. These facts hardly encourage one to add the primula obconica to one's floral possessions.

I am, Sirs, yours faithfully,

W. H. BROWN.

Leeds, March 17th, 1906.

THE INCUBATION OF MUMPS AND ITS ORCHITIS.

To the Editors of THE LANCET.

SIRS,—It is seldom that, even to medical officers of schools, so unique an opportunity is afforded as that which occurred to me at the commencement of this term at Rugby, of recording the incubation period of a disease involving a large number of instances due to a single source of infection.

The school reassembled on Jan. 18th, every boy having to be in his boarding-house before 10 P.M. In a certain boarding-house, numbering 57 boys, one named G—— arrived at 7.30 P.M. After the usual friendly greetings incidental to such occasions he retired to bed at 9.45 P.M. In a dormitory with nine others. On the morning of Jan. 19th at 8.45 I saw him, diagnosed mumps, and removed him at once to the sanatorium. He was associated with *many* of his school-fellows from 7.30 P.M. to 9.45 P.M.,

and with a *few* in his dormitory from 9.45 P.M. to 7.30 A.M. After this he was separated absolutely from his schoolfellows in the sanatorium throughout his illness.

Now let us analyse the damage he occasioned during those few hours. I should state, however, *in limine*, that the type of mumps was severe; and although every boy was kept in bed for eight clear days (never even putting foot to the floor for any purpose) more cases of orchitis occurred than I have ever witnessed when such care is observed. A large epidemic—66 cases—ensued but none of them was of the same severity of type. I only give the period of incubation from the one source of infection, for after this it was difficult to trace it. It is usually asserted that it is in the dormitories, where eight or nine hours are passed, that the largest number are infected. Yet the originator of this group of cases slept in a dormitory with nine school fellows and only infected two of them (marked with an *), four of them having previously suffered from the malady, while three escaped.

The Period of Incubation of a Group of Cases of Mumps and its Orchitis.

Name.	Date of attack of mumps.	Day from infection.	Date of commencement of orchitis.	Day of illness.
G.	Jan. 18th, the originator of this group of cases.			
1. H.	Feb. 3rd.	Sixteenth.	Feb. 6th.	Third.
2. P.	,, ,,	,,	,, 11th.	Eighth.
3. S.*	,, ,,	,,	,, 13th.	Tenth.
4. D.	,, ,,	,,	—	—
5. T.	,, ,,	,,	Feb. 10th.	Seventh.
6. J.*	,, 4th.	Seventeenth.	—	—
7. P.	,, ,,	,,	—	—
8. B.	,, ,,	,,	—	—
9 C.	,, ,,	,,	Feb. 11th.	Seventh.
10 F.	,, ,,	,,	—	—
11 R. T.	,, ,,	,,	—	—
12 P.	,, ,,	,,	Feb. 12th.	Eighth.
13 M.	,, ,,	,,	—	—
14 B.	,, 5th.	Eighteenth.	—	—
15 C.	,, ,,	,,	—	—
16 W.	,, ,,	,,	—	—
17 B.	,, ,,	,,	—	—
18 F.	,, ,,	,,	Feb. 13th.	Eighth.
19 C.	,, ,,	,,	—	—
20 W.	,, 6th.	Nineteenth.	Feb. 14th.	Eighth.
21 G.	,, ,,	,,	—	—
22 M.	,, ,,	,,	Feb. 13th.	Seventh.
23 M.	,, 10th.	Twenty-third.	—	—

Thus 37·5 per cent. of these cases suffered from orchitis—a larger number than had ever previously occurred in my experience—and 77·77 per cent. on the seventh to the eighth day.

I am, Sirs, yours faithfully,

March 16th, 1906 CLEMENT DUKES, M.D. Lond.

ETHYL CHLORIDE AS A GENERAL ANÆSTHETIC.

To the Editors of THE LANCET.

SIRS,—Having read various articles recently in THE LANCET regarding the use of ethyl chloride as a general anæsthetic, and having myself had the opportunity of frequently administering it, I feel justified in craving the courtesy of your space in order to state my results and to give a few opinions regarding the use of the gas. I may say that I am the more inclined to do this on account of the dread in which I have noticed a great many medical men, both at hospital and in practice, hold ethyl chloride as a general anæsthetic.

During recent months I have administered chloride of ethyl several hundreds of times and I have never had the least trouble during or after its administration. These results I am inclined to attribute more, in spite of the strong opinion to the contrary, to the safety of the gas than to any particular skill on my part in administering it. I have given it to people of both sexes and of all ages and have found it as satisfactory in young children and old persons as in middle-aged men and women. A large percentage of patients to whom I have administered the gas have been placed under the anæsthetic for the extraction of teeth and I have found the rapidity of the production of anæsthesia a great advantage when compared with that of nitrous oxide gas. The length of the anæsthesia, too, is convenient, the simplicity of administration and the far smaller expense all giving it a decided advantage over nitrous oxide. For the operation of the removal of tonsils and adenoids I have found it invaluable, the length of the anæsthesia being amply sufficient for any experienced operator to remove both tonsils and thoroughly to scrape the posterior pharyngeal wall with a Gottstein's curette. In these cases I have been discussing ethyl chloride as an anæsthetic for a short period. I have never gone in for the routine practice of giving it for prolonged anæsthesia by the open method, but with the ordinary mask I have kept a patient under for over 20 minutes with no inconvenience. I cannot say I have found the after-effects of chloride of ethyl at all distressing and vomiting has occurred only in a large minority of cases and then never of a serious character.

And now one word as to the method I have found the most beneficial for administering the gas. I squirt into the bag of the ordinary ethyl chloride inhaler supplied by the instrument makers from 2·5 to 5 cubic centimetres of ethyl chloride from one of Messrs. Duncan and Flockhart's flasks—2·5 cubic centimetres for children, 3 cubic centimetres for women, and up to 5 cubic centimetres for men. I then place the bag over the face until anæsthesia is produced. This nearly always is accomplished within a minute, the usual period being three-quarters of a minute, although it varies from four or five breaths to the full minute. The disadvantage of this method is the sudden exhibition of the full amount of the gas to the patient, with a consequent choking sensation, and fighting for breath during the first few seconds. The alternative is to squirt into the bag, or through wire gauze into the face-piece, small quantities, such as one cubic centimetre, from time to time, but as one cannot prevent the entrance of air, however little, the anæsthesia is delayed, and I have noticed in some cases it lasts for a shorter period. I have also found ethyl chloride of great value in the commencement of anæsthesia under ether, introducing it into the bag by means of tipping up a small glass tube containing five cubic centimetres of the gas and allowing the ethyl chloride to run through a rubber tube directly into the bag of a Clover's inhaler.

I feel that if more medical men who have had experience of administering chloride of ethyl would publish their results a great deal would be done to remove what I consider the prejudice of many of our profession to the gas. I consider it should at least be given an extensive trial.

I am, Sirs, yours faithfully,

Blackheath, S.E., March 13th, 1906. HAROLD MOWAT.

THE PROGNOSIS AND TREATMENT OF CROUPOUS PNEUMONIA.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of March 3rd, p. 589, I read with great interest Dr. C. H. Cattle's paper on Pneumonia. He mentions a case of pneumonia in a man, aged 73 years, with a temperature chart showing rigors, which he very rightly describes as being extremely rare in this disease. The patient quoted previously suffered from prostatic trouble and during the attack of pneumonia was catheterised. I should like to ask Dr. Cattle what was the condition of the urine? Unless this excretion was normal I should be inclined to suggest that the state of the bladder and urine was more likely to be the cause of the rigors rather than the pneumonia.

I am, Sirs, yours faithfully,

St. Mary Cray, Kent, March 17th, 1906. J. M. BENNION.

THE STERILISATION OF MILK.

To the Editors of THE LANCET.

SIRS,—Quite recently, and with very great interest, I have read the detailed and scientific report of Professor R. Tanner Hewlett on the Budde process for sterilising milk which appeared in your issue of Jan. 27th, 1906, p. 209. The Budde process seems to me to be a very genuine one and great credit is due to the discoverer, yet clearly it leaves much to be desired compared with such a process as that known as the

"vacca" process, an account of which I remember to have read in your valuable journal. The great drawback to milk treated by the Budde process is that it only remains sweet for a period of from eight to 14 days, whilst your report, coupled with that of Dr. Klein, of the "vacca" milk in your issue of March 8th, 1902, which I have before me, states that the latter will keep indefinitely in bottle—in fact, some of the samples on which you report you state to be quite a month old. The "vacca" milk is, in fact, absolutely sterile and yet neither heat in the ordinary way nor preservatives are employed. The Budde process, on the contrary, according to Professor Hewlett, does not kill spores.

From Professor Hewlett's account of the Budde process I cannot help thinking that the results must prove to be rather uncertain. The effect of this method must be largely dependent upon the quantity of "catalase" which is present in the fresh milk. This quantity varies in fresh milk and decreases as the milk gets older, from the time it has been drawn from the cow. This must necessarily cause an element of uncertainty in the process. In any case it must be admitted that in the Budde process a preservative is added to the milk in the shape of peroxide of hydrogen, which may or may not be harmless. In Germany, at any rate, the addition of peroxide of hydrogen to fluids or food is prohibited. By treating milk by the Budde process there is not always the certainty that the peroxide of hydrogen has decomposed because the same quantity of catalase is not always present and it is impossible to find this out each time in a practical methodical way. I am pleased to note that Professor Hewlett admits this himself where he says that it may prove necessary to add yeast enzymes artificially to the milk.

Having made the preservation of milk the object of many years' study I was naturally interested in this article and I trust you will allow me to point out what I consider to be its scientific imperfections. However ingenious the idea may appear it is not on a level, in my opinion, with the vacca process which you have previously described, which, while completely preserving the milk, adds nothing to it or disturbs its nourishing qualities, as is the case by the ordinary methods of sterilising milk.

I am, Sirs, yours faithfully,

Amsterdam, March 14th, 1906. Dr. F. BASENAU.

THE HAMPSTEAD GENERAL HOSPITAL.

To the Editors of THE LANCET.

SIRS,—The management of the Hampstead General Hospital has been the subject of much criticism by the local medical profession for some time past and the matter has been coming to a head gradually in the course of the past year or two. The hospital was originally founded by a local general practitioner as a home hospital, where individual local practitioners could themselves continue, in more satisfactory circumstances, the treatment commenced in the patients' homes. The hospital was in considerable difficulties for some years; finally it was only by the united efforts of the local profession that it was kept open.

From a home hospital this institution has advanced, or degenerated, into a "general hospital," with a large out-patient department, a limited staff of general practitioners, a few (pay) beds for the patients of practitioners not on the staff, and a management on which the outside profession is unrepresented. This divorce between the management and the local profession is greatly to be deprecated on every ground. The hospital has recently become possessed of a very large donation and it is rumoured that it is about to receive another. It has been transferred to a new specially erected building quite recently (and objections might be easily made to the choice of site). The lines upon which the hospital authorities have been recently developing that institution indicate further alterations in the near future and, indeed, there are rumours, apparently well founded, which foreshadow further drastic changes.

This letter is not for the purpose of opening a discussion in your columns, Sirs, but in order to request the general practitioners of Hampstead and its neighbourhood to keep an open mind upon the subject in view of the proposal to call a meeting of the local profession in the course of the next few weeks to consider the whole matter. I will, therefore, merely observe that there appears to be a consensus of medical opinion that an out-patient department in this neighbourhood is neither necessary nor desirable; that if any hospital be required in Hampstead it should be one of the nature of a home hospital; that the appointment of a small privileged staff is unfair to the patients of other practitioners, as, indeed, it is to the practitioners themselves (though the staff, by all reports, do their work in a very satisfactory manner); and that the appointment of a staff of consultants, which is rumoured as a possibility, in place of the existing general practitioner staff is opposed both to the original objects of the founder and to the needs of the locality.

I am, Sirs, yours faithfully,

F. R. HUMPHREYS,
Chairman, Hampstead Division, British Medical Association.

Fellows-road, N.W., March 20th, 1906.

THE ADMINISTRATION OF ADRENALIN IN CASES OF FAILURE OF THE CIRCULATION.

To the Editors of THE LANCET.

SIRS,—Mr. J. P. Lockhart Mummery's comments on the case I published in THE LANCET of March 3rd did me the service of calling my attention to his extremely valuable articles in the issues of March 18th and April 1st, 1905. I quite see that theoretically the ideal method of administering the drug is intravenously. He, however, states that even "in cases of failing circulation ..... adrenalin if injected under the skin will have a very poor chance of reaching the peripheral circulation." In my case, however, the pulse at the wrist was not to be felt and yet the recovery of the patient proves that it did reach the circulation. Of course, it may be said that the hypodermic needle pierced a fair size vein, but the same almost immediate effect (about 20 seconds elapsing before a change was noticed) occurred after each injection. The point I wish to emphasise is that in suitable cases an injection of adrenalin hypodermically may be of the utmost service. As a general practitioner I have constantly come across cases in which I now see that its use might have been of the greatest value. In many of these, circumstances would not have permitted intravenous infusion. It consequently seems to me that if some manufacturer would place on the market sealed capsules containing suitable doses capable of being carried in the hypodermic pocket-case he would be fulfilling a want. Mr. Mummery also finds the action of adrenalin very transitory. In my case, however, weakening of the pulse began quite 15 minutes after the first injection and was not marked enough to call for a second injection till 30 minutes after it. It is true that I gave 10 minims orally, but Mr. Mummery says this can have had no effect. The remaining injections were given at about two-hour intervals according as the pulse required it; that is to say the effect appeared to last about that length of time. One small point more: do the words "vaso-motor stimulant" imply a nervous action? It happened that I knew the action of adrenalin was direct, and unless these words imply action through a nerve, which it does not seem to me they do, surely it is not right to say that "adrenalin can in no sense be called a vaso-motor stimulant."

I am, Sirs, yours faithfully,

Chiswick, W., March 19th, 1906. H. O. BUTLER.

THE DANGERS OF THE FLUTE-KEY FLASK FOR ADMINISTRATION OF ETHYL CHLORIDE.

To the Editors of THE LANCET.

SIRS,—I beg to thank you for inserting my letter in THE LANCET of March 17th on the dangers of the flute-key flask. I regret that I have made an error. Instead of "(3) Messrs. Sumner's measure," it should be "Messrs. Reynolds and Branson's 'Antivolat.'" I should be glad if you would correct this.—I am, Sirs, yours faithfully,

THOMAS Y. SIMPSON.

Royal Albert Hospital, Devonport, March 19th, 1906.

THE BATTERSEA BOROUGH COUNCIL AND ITS MEDICAL OFFICER OF HEALTH.

To the Editors of THE LANCET.

SIRS,—I observe in the list of duties proposed by the Battersea borough council for the medical officer of health to be appointed by them that this officer must "issue all instructions and communications to sanitary inspectors

(male and female) through the chief sanitary inspector." As a medical officer of health who has direct supervision of the work of both male and female inspectors may I draw attention to the serious difficulties which will almost certainly arise if this duty as to instructions and communications be literally carried out and particularly in the case of the female inspectors? Their work will consist, one presumes, in, for example, visiting the mothers of newly born children and advising as to feeding and the general management of infancy, inquiring into circumstances attending deaths from diarrhœa or cases of puerperal fever, advising as to the management of cases of measles, whooping-cough, and the like, visiting midwives and seeing that the regulations of the Central Midwives Board are carried out, and so on. Yet all "instructions and communications" in reference to these and the other duties of female inspectors must be transmitted through the chief sanitary inspector.

This transference of the practical administration of matters the importance of which has been brought to light solely by medical men to one who, however well qualified he may be otherwise, possesses no medical knowledge, almost amounts to the putting of an indignity upon the profession. Moreover, the constant reference from one official to another cannot but seriously hamper important work, and work which is often of an urgent character. My opinion is shared, I know, by the medical officers of health of many other provincial large towns. Intending candidates for this position will also do well to compare the original duties of the office issued in February, 1906, with the ones issued within the past week or so; the relations of the medical officer of health and chief sanitary inspector have been materially altered by the recent issue and most medical officers of health will think considerably to the detriment of the former.

I am, Sirs, yours faithfully,

March 19th, 1906. NOT AN APPLICANT FOR THE POST.

THE FIFTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

THE OVERLAND ROUTE TO LISBON.

(FROM OUR SPECIAL COMMISSIONER.)

UNDOUBTEDLY for those who can afford the time the sea journey to Lisbon is most attractive. It is the cheapest route and nothing can be more healthy and more restful than a few days' quietude on the ocean. If, however, the traveller is not a good sailor then the overland route is preferable. Consequently, to avoid sea-sickness and to save time it is probable that the greater part of the members of the International Congress of Medicine will elect to travel by land. In that case, the British contingent must pass through Paris and must stop there for the night if travelling by the Sud express. This, of course, is the dearest of all routes and it allows of no sightseeing and only of such rest as can be obtained in a sleeping-car. From Paris it is the quickest route but the train only runs three days a week and does not correspond with any English mail. The Sud express leaves Paris at 12.18 P.M. The London and Calais mail reaches Paris at 5.50 A.M., and to be homeless in Paris for more than six hours after a night journey is no pleasant prospect. By the Dieppe route the same difficulty occurs, only Paris is reached a little later—namely, at 7.5 A.M. The Southampton route should correspond but it will not suit those whose object it is to avoid the sea. By Calais or Dieppe it is not possible to sleep properly as the sea journey is too short; but on the luxurious and large Southampton boats there are a clear seven hours and good berths. Should, however, the wind and tide be unfavourable there is a chance of missing the 8 A.M. express at Havre and then the connexion with the Sud express would be lost. Even if the journey is performed under normal conditions Paris is not reached before 11 o'clock, so there is only just the necessary time to clear the luggage and to drive the short distance that separates the Gare St. Lazare and the new Orleans railway station on the Quai d'Orsay. Therefore, so far as the journey from England is concerned, there is no saving of time secured by the Sud express, for it is necessary to start the day before and to spend a night at Paris.

Those who are indifferent to fatigue and wish to save the extra cost of the Sud express will take the ordinary express. In that case they can leave London on April 16th (Monday morning) by any one of the three routes—Calais, Boulogne, or Dieppe. The trains arrive at Paris in time to allow for dinner with all ease and comfort. Coffee and cigars may follow, for the express does not leave the Quai d'Orsay before 10.23 P.M. Bordeaux is reached in time for coffee next (Tuesday) morning, and lunch may be had at midday on the Spanish frontier at Irun. The main Madrid line is left at Medina at 1.48 in the night, Salamanca is reached at 5.45 on Wednesday morning, and Lisbon at 10.25 on Wednesday evening, and the Congress begins on the next day. It would, however, be a thousand pities to undertake so long and wearisome a journey without stopping on the road. If the traveller must go straight through, then he had better take the Sud express. He would leave London on Sunday morning, the 15th; sleep at Paris; and, starting on Monday at 12.18 P.M., reach Lisbon a little before midnight on Tuesday, the 17th. There will then be the whole of Wednesday for sightseeing before the Congress begins. On the other hand, it would be very awkward to arrive at Lisbon at about midnight if rooms had not been secured beforehand. The ordinary express is due at Lisbon at 10.25 P.M., and that allows an hour or two more to find quarters; also this train runs every day instead of only three times a week.

If time permits the difference of fare between the Sud express and the ordinary express will just about cover the cost of some extremely pleasant and interesting sightseeing. Tastes and interests differ so widely that it is not possible to make suggestions likely to prove valuable to everyone. Personally, I have always preferred to make my first run from Paris to Bayonne, that is from 10.23 P.M. to 10.59 A.M., but others prefer to leave the train at 7.3 A.M., when it reaches Bordeaux. There is also a good train leaving Paris at 8.7 P.M. and arriving at Bayonne at 7.37 A.M. but this is not a through train to Lisbon. If the through train is to be caught again the next morning it means leaving too early if the stop is made at Bordeaux. Also, for a short stay and a rest and as regards the character of the buildings and surroundings generally I much prefer Bayonne. This town is reached just in time for the French *déjeuner* and the afternoon may be spent on the sands or rocks of the beach at Biarritz. Doubtless many would select to sleep there at one of the numerous cosmopolitan hotels. For my part, I am more interested in the quaint historic town of Bayonne with its narrow, shady streets and cool arcades leading up to its magnificent Gothic cathedral, the whole being surrounded by ancient walls, moats, and bastions that give it a picturesque appearance. Here the Basque native population is not obliterated by tourists and pleasure-seekers who throng from all parts of the world to so fashionable a resort as Biarritz. In any case, with 24 hours' stay, it is possible to obtain not only a good sleep—this time not in the train but in a real bed—but to see both Biarritz and Bayonne. Indeed, those who know Paris well might travel from London to Bayonne, stopping only at Paris for dinner as indicated above. Or to go even more quickly, the 2.20 P.M. London train *viâ* Folkestone could be taken, the traveller dining in the train after leaving Boulogne, and reaching Paris at 9.15 P.M. in time to drive from the northern station to the Quai d'Orsay for the 10.23 P.M. express to Bordeaux and Bayonne.

From the latter town, leaving comfortably a little after 11 in the morning, Burgos could be reached on the same evening and there one or two days may well be spent. The next stage would naturally be Salamanca and thus two of the most interesting towns in Spain could be visited and it would scarcely be too much to devote a couple of days to each of them. From Salamanca, after crossing the Portuguese frontier at Villa Formosa, the journey might be broken again at Pampilhosa, the junction for Coimbra and Bussaco. Then, again, some of these towns might be visited on the outward journey and others on the return journey. In any case, it is a very long route to travel without stopping and it is also a pity to pass through so many historical and interesting cities without seeing anything of them. But, on the other hand, travelling is not easy as it is in England. Often there is but one really good train per day and it does not always start at a convenient hour. There are many charms and advantages to be enjoyed when away from the rush and hustle of great modern centres of business and civilisation, but there are also disadvantages, notably the lack of frequent and rapid trains.

TEMPERANCE LEGISLATION IN FRANCE.

DR. JACQUES BERTILLON ON THE NUMBER OF CHILDREN AS A BASIS FOR TAXATION.—HOW THE ABOLITION OF TAXES ON WINE AND BEER HAS REDUCED THE CONSUMPTION OF SPIRITS AND THE COST OF LIVING.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

PART II.[1]

THE sweeping reform that threatened to reduce the Paris *octroi* revenues by one-third was not carried out without much discussion and the elaboration and presentation of many reports. The literature on the subject soon assumed formidable dimensions. But what is especially significant and instructive is the fact that in this lengthy controversy the principle involved was never challenged. Not a single voice was raised against the contention that cheap pure wine and cheap pure beer meant temperance. Not a whisper of a doubt was manifested as to the great advantage of placing an abundance of wine within easy reach of the multitude. Some fear was expressed that if wine was so very cheap it might be illicitly distilled and converted into spirits, but the apprehension here is in regard to spirits, to brandy, not to wine. Everyone recognised that spirits, especially if inefficiently rectified, are prejudicial to health; and everyone was anxious to increase the duty on spirits but no one doubted the hygienic character and the beneficent effects of pure wine. The discussion ran mainly on the new taxes which must be imposed so as to make up for the loss that would result from removing the *octroi* duties on "hygienic beverages," a loss which, it has been seen, would exceed £2,000,000 per annum. From the first a desire was strongly expressed that the redistribution of taxation, now rendered inevitable, should be made the occasion of relieving the burdens of the poor. In one of the earliest reports on the subject the Prefect of the Seine, M. de Selves, says that the Municipal Council must be guided by the following considerations: "To choose such taxes as, firstly, will not weigh, at least not in any perceptible degree, upon the labouring classes which constitute the most interesting part of the population of our city, the classes for which the suppression of the *octroi* should render daily existence less painful. Secondly, such taxes as can be immediately applied."

One of the most interesting reports arising out of the controversy on the new taxes was that issued by Dr. Jacques Bertillon, ex-president of the Statistical Society and president of the National Alliance for the Increase of the French Population. Thus the problem is raised as to how far new taxes can be imposed without interfering with the increase of population. At once Dr. Bertillon proclaims the principle that all inhabited house duties should be estimated, not on the number of rooms or value of the apartment or tenement, but on the number of children. Though the full purport of this proposition is not evident at first sight a little consideration renders it quite obvious. The law, solicitous of the poor and industrial classes, exempts tenements of less than £20 annual rental from direct taxation. But Dr. Bertillon very justly observes that if a tenement of three rooms is occupied by six persons this is a proof of poverty; while, if there is but one tenant it is a proof of comparative ease and comfort. The General Councils of 45 French departments have carried motions in favour of this principle—namely, that taxes should be based on the number of tenements and not on the value of the tenements. According to a census of 830,820 occupied tenements in Paris 261,595 consisted of only one room, and 216,832 of two rooms. The immense majority—that is, 656,680 tenements—had from one to three rooms. Of the really large tenements, of from six to ten rooms or more, there were only 52,913. There were 198,599 tenements of less than £8 yearly rental; 325,755 of between £8 and £16; and from less than £4 up to £20 annual rental there were 608,722 tenements out of a total of the 816,140 tenements about which these details were obtained. The total rental value is put down at 463,940,000 francs, of which 163,556,582 francs are derived from tenements of from one to three rooms. Dr. Bertillon then comes to the point and urges that where there is only one inhabitant per room there should be no remission of taxation and this would apply to 510,879 rooms and persons. Where there are more than one but less than two persons per room, for instance, a family of four in a tenement of three rooms, there the remission of taxation should be optional and depend on other circumstances. This would affect 240,315 tenements. But where there are two persons for one room, then without doubt all taxation should be remitted, but this would only affect 76,012 tenements. The rents paid by the one tenant per room category, and which should be taxed, amount to 369,840,000 francs; the second category, where there might be at least some partial exemptions, amounts to 78,900,000 francs; and those who undoubtedly should not be taxed at all only pay rents to the amount of 15,200,000 francs. There are 834,615 persons in tenements where they cannot all have a separate room and 347,395 persons live two or more per room. This is a population of 1,182,010 persons who might be completely or partially relieved from the inhabited house duty and this removes at least from full taxation 94,100,000 francs paid in rent. The amount, however, of money paid for rents below 500 francs or £20 is 141,904,328 francs. Thus, while bringing relief to those who are really poor and overcrowded, the sum total of rentals that could be taxed would be considerably increased. Of course, Dr. Bertillon speaks as a sanitary reformer. Indeed, he is a familiar and distinguished member of the International Congresses of Hygiene. In this instance he has devoted himself to devise a method of raising taxation and yet of reducing pressure on the poor.

The above system may be considered complicated, in which case Dr. Bertillon urges that approximately the same result would be attained without counting the number of rooms. It is easy to ascertain the average rent of rooms. In Paris it is 217 francs per annum per room (£8 13*s.* 8*d.*). Let, therefore, the rent of the tenement be divided by the number of inhabitants. If the amount per head is over 220 francs (£8 16*s.*) then the full tax should be paid. If between 110 and 219 francs there may be some reduction; if under 110 francs then there should be no taxation whatsoever. By such means inhabited houses could be taxed and yet not in such a manner as to take money from those who have hardly enough to live upon.

The great problem of the housing of the poor, which is intimately connected with the raising of local taxation, is also deeply affected by the question of ground values. The town lays sewers, makes a metropolitan railway, or effects other improvements, and a house built 40 years ago on land worth 500 francs the square metre, though old and in a bad condition, has greatly increased in value, because the land on which it stands is now worth 1000 francs or even 1500 francs the square metre. Therefore it was urged that the ground should be taxed separately from the building; and above all, that the land which is not utilised—that is held back for speculative purposes—should be taxed. All these proposals are of great practical interest to those who are endeavouring to find ways and means. It is a double-edged problem. On the one hand, it is desirable not to tax the dwellings of the poor or the food of the poor, and to free "hygienic drinks" from all taxation; on the other hand, if one set of taxes are to be abolished other modes of taxation must be greatly increased. Then, again, instead of reducing taxation increasing demands are made every day for large public works, many dealing directly with public health, such as the disposal of sewage, the widening of streets, the demolition of insanitary areas, to say nothing of the feeding and medical supervision of children at school. All these proposals necessitate increased taxation. Nor is this merely a French and a Parisian problem. Very similar requirements are making themselves felt in all the great centres of Europe. A congress of capitals, such as Sir Edwin Cornwall proposes, would render the international similitude of such problems more evident, though they are already obvious to those who have studied such subjects. What therefore is occurring in Paris to-day is not merely of interest because anything that concerns so brilliant a centre of civilisation must awaken the sympathetic interest of the whole world, but because throughout the world the peoples are face to face with very similar problems. People are concerned to see that in France the old *octroi* system is still maintained, though with but rare exceptions it has been abolished elsewhere. They are for the same reasons glad to note that a

[1] Part I. was published in THE LANCET of March 10th, 1906, p. 709.

big step has now been taken towards its complete abolition. In England a loud complaint has been raised against the duty on tea and the demand for a "free breakfast table" is still a popular cry, the argument always being that such taxes weigh heavily upon the poor while imperceptible to the rich. But it is not every attempt to relieve the poor that succeeds. For instance, in Paris there is no tax on objects of first necessity, such as milk, vegetables, and ordinary fish. M. Prévandeau, an official in the employ of the Paris Municipal Council, points out that it is the retail tradesman and not the legislator who decides whether the rich or the poor shall pay the taxes. He gives an example taken from daily experience. A fishmonger purchases at the public market 100 kilogrammes of fish of the first category—salmon, turbot, lobsters, &c. For this he has to pay 40 francs 20 centimes *octroi* duty. Then he buys 100 kilogrammes of fish of the second category—mullets, soles, carp, &c., and for this pays 21 francs 60 centimes *octroi* duty. Finally, he buys 200 kilogrammes of ordinary, or the third category, fish—skate, herring, &c. This is the food of the poor, so he does not pay any *octroi* whatsoever and the legislator fondly anticipates that the poor will have a plentiful supply of cheap fish. But the tradesman finds that there is a very slight demand for the best fish, so he sells it for 3 francs 20 centimes the kilogramme though it cost him 3 francs. The second category has cost him 2 francs and he may sell it for 2 francs 25 centimes the kilogramme. But the real business is done with the ordinary fish for which there is a constant and an ample demand, and this he can sell for 1 franc 50 centimes the kilogramme, though it has only cost him 1 franc the kilogramme. He barely makes 10 per cent. profit out of his sales to the rich while realising 50 per cent. profit on his sales to the poor. Who, then, pays the *octroi* duties and, indeed, all the other taxes which in the first instance are disbursed by the tradesman?

What occurs in regard to fish could not so easily happen with regard to wine. It is almost impossible for the public to know the value of fish, as it varies with the condition of the weather, &c. Every day fish are caught in favourable or unfavourable circumstances; but the value of wine is more stable, as there is only one vintage in the year. In some wine shops the old price of wine might be maintained but this would be exceptional. The customer taking a little trouble would easily find out how to benefit by the abolition of the *octroi* on "hygienic beverages." This has been no slight benefit. It is calculated that if a family of four persons had each half a litre of wine per day—and this is a small allowance—that family paid annually in *octroi* duties for wine 137 francs 75 centimes, or £5 10*s*. 2½*d*. This is no doubt a more correct view than to state that the saving amounts to £1 7*s*. 6*d*. per head per annum. As a rule men drink more than half a litre of wine per day. Women perhaps drink a little less and certainly the children do not drink anything like half a litre of wine in a day. The general custom is to give them what is known as *eau rougit*, or water just reddened with a little wine. A child under 12 years of age would probably have at a meal a tumbler containing about 180 grammes of water and from 20 to 40 grammes of wine at 10 per cent. of alcohol—that is, from two to four grammes of alcohol at each of the two daily meals. The parents taking from a quarter to half a litre at each of the meals would consume from 50 to 100 grammes of alcohol per day or from a little less than two ounces to a little more than three ounces of alcohol per day. But such calculations only apply to the vigorous artisan class and the more prosperous sections of the population.

The latest figures show the importation during 12 months of 4,922,524 hectolitres of wine into Paris. Dividing this by 365 days we have a consumption of 13,486 hectolitres, or 1,348,600 litres per day. According to the census of 1901 the population of Paris was 2,714,068. This makes almost exactly half a litre per day for every man, woman, and child. Consequently, it is quite evident that the adult males drink a good deal more than half a litre.

It has been argued that the best way to exempt the poor is the English system of a tax on the rental value of property. In Paris it is reckoned that each inhabitant used to pay in *octroi* dues 60 francs 80 centimes, or 243 francs 20 centimes for a family of four persons (£9 14*s*. 7*d*.) To replace this *octroi* it is said a tax of 16 per cent. on rent would suffice. And this is how it would work out for the benefit of the poor. A family of four, paying only £8, or 200 francs, rent, taxed at 16 per cent. would pay 32 francs instead of paying 243 francs 20 centimes through the *octroi*, so these very poor people would save 211 francs 20 centimes. If they paid 300 francs, or £12 rent, they would save annually 195 francs 20 centimes. At £20 rent, or 500 francs, the benefit would be 163 francs 20 centimes. At 1000 francs the saving would fall to 83 francs 20 centimes, and at 1500 francs rent to 3 francs 20 centimes. Thus all families of four persons with rents not exceeding £60 a year would benefit, but at £64 a year rent they would lose 12 francs 80 centimes and the loss would increase in due proportion with the increase of the rent. Of course, the fault of this calculation is that it presupposes everyone pays identically the same amount of *octroi* dues. The illustration in regard to the fish given above shows that sometimes the poor pay more and, in other cases, it may be the rich. It is nevertheless quite certain that a much larger proportion of a poor man's income goes to food than is the case with the rich. This argument, however, applies equally to rent, which often absorbs as much as from 25 to 30 per cent. of a labourer's income, so a tax on rental, unless it was graduated, would not meet the case. Indeed, the suggestion made by Dr. Bertillon is that which appears best suited for the purpose. Many other schemes of taxation were brought forward which it would take too long to enumerate; all that need be said is that in these proposals the guiding idea is to relieve the burdens of the poorer classes or at least to see that they shall not in future pay a larger share of public taxes than the rich.

The practical result of these discussions was the imposition of the following taxes: a tax of ½ per cent. on the saleable value of land not built upon; a tax of 1 per cent. on the letting or rental value of dwellings; a tax or charge for the removal of household refuse, a service which corresponds to the emptying of dustbins in London; a tax on clubs; a tax on carriages and horses; an additional tax of 1 per cent. on transfers; an additional tax of 1·25 per cent. on the sale of a commercial goodwill; an *octroi* duty of 5 francs per 100 kilogrammes of oranges, lemons, or citrons; an additional half centime on the four direct taxes; a tax of 0·20 per cent. on the value of real estate; and finally the greatest tax of all, meant as the counterpart of the abolition of the *octroi* on "hygienic drinks." This is an increase of the *octroi* duty on spirits of 85 francs 20 centimes the hectolitre. The *octroi* used to be 79 francs 80 centimes; it is now 165 francs the hectolitre or £6 12*s*. the 22 gallons. The "hygienic drinks" are let in free; the tax on dangerous drinks is doubled. Further, the Municipal Council passed a resolution approving the proposal made in the Chamber of Deputies to forbid altogether the sale in France of any drink condemned by the Academy of Medicine as injurious to health. This proposal was made by M. E. Vaillant who, when an exile in England, qualified as M.R.C.S. Eng.

Having now described how the great reform was brought about and how the income derived from taxing "hygienic drinks" has been replaced by other taxes, something may be said as to the consequences. Though it is still too soon to judge with full knowledge of the case, nevertheless a few important results are already perceptible. From the health point of view the greatest result is that the receipts from the *octroi* on spirits have fallen below the estimate based on previous experience, and this to the extent of 7,000,000 francs (£280,000). When the tax on spirits was 79 francs 80 centimes the hectolitre the last twelvemonth of this tax yielded 15,615,000 francs. By doubling the tax the income would have been doubled if the population had continued to drink the same amount of spirits. The object of the temperance reformers and their argument throughout has been that with cheap wine there would be less drinking of spirits. The reduction of the revenue from spirits to the extent of 7,000,000 francs vindicates their contention. Altogether the new taxes yield 11,200,000 francs less than was anticipated. The tax on oranges and lemons has been abolished as being more trouble than it was worth. Considering that real estate and house property in Paris automatically increase in value to the extent of about 11,000,000 francs (£440,000) annually the tendency is to devise methods of taxation to tap this unearned increment. Viewing the situation as a whole and on the highly considered authority of M. Alfred Neymark, director of *Le Rentier*, a paper which may be taken as representing the interests of the moneyed classes, the efforts to relieve the poorer section of the community have been fairly successful. He calculates that if a household of one person does not pay more than £40 rent, of two persons £80 rent, of three persons £100, of four persons £120, of five persons £140, and of six persons £160, the total of the new taxes these people have to meet amounts to less than the

octroi duty which they used formerly to pay on the wine and other "hygienic drinks" which they consumed. Those families, however, who pay more than £200 in rent, unless they are very numerous, will find the new taxes heavier than the old indirect tax on "hygienic drinks." Then, as it is this wealthy class that possesses most of the horses, carriages, and motor cars they have a direct tax to pay for these luxuries. But Dr. Bertillon, in his calculations, found that out of 816,140 tenements or apartments in Paris there were only 10,561 for which a yearly rental of £200 or more was paid. From this it is permissible to conclude that the removal of taxation on "hygienic beverages" has proved of financial benefit to the inhabitants of more than 800,000 tenements or apartments, while it has increased slightly the taxation of the wealthy occupants of about 11,000 apartments. But more important by far than this financial advantage is the fact that now that the quantity of spirits drunk has decreased there is every reason to anticipate a corresponding decrease in the prevalence of disease, insanity, and crime due to alcoholism.

(To be continued.)

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE Principal (Sir Oliver Lodge) has not yet returned but it is hoped that he will be present when the summer session opens and that his health will be completely restored. It is evident, however, that he will have to take greater care of himself in future and that he must limit the amount of work he does, for no constitution, however strong, could long stand the strain of the work which he has done in past years. At the last meeting of the Council of the University Mr. George S. West, M.A. Cantab., was appointed assistant lecturer and demonstrator in botany in succession to Dr. A. J. Ewart; Mr. Theodore Groom, M.A. Cantab., D.Sc. Lond., was appointed senior lecturer in geology and geography in the place of Professor W. W. Watts, F.R.S.; Mr. Donald M. Levy, Assoc. R.S.M., was appointed demonstrator in metallurgy; and Mr. Seymour G. Barling, M.B., B.S. Lond., F.R.C.S. Eng., was appointed junior demonstrator in anatomy.

The General Hospital.

It appears from the annual report that about one-half of all the hospital cases in Birmingham are treated at the General Hospital and the work of the hospital is carried on under high pressure. The patients applying to the hospital have been so numerous that in spite of the transference of the more chronic cases to the Jaffray Hospital there is a constant list of applicants waiting for admission. With the increasing amount of work are associated increasing expenses, and although during the past year the adverse balance has been reduced from £8439 to £6258, this has been due to the unusually large amount received from legacies which are an extremely variable source of income. Therefore, if the hospital is to continue its services on the present scale new and increased subscriptions and donations must be obtained.

The Death-rate and the Birth-rate.

The death-rate of the city and the surrounding districts continues to keep at a comparatively low level and in the absence of any serious epidemics and with the greater attention now given to sanitation there seems every probability that no serious rise need be feared. In this association it is interesting to notice the sanitary history of Aston Manor. The area of the borough is only 943 acres. About 83 years ago, when the Manor consisted largely of green fields, the death-rate was 19 per 1000; a year later it rose to 21 per 1000. At that period the population was about 40,000. Sanitary matters then received more attention, and though the population increased to 77,000 at the last census the death-rate gradually fell until in 1902 it was 13 per 1000, and in 1905, with an estimated population of 81,000, it stood at 14 per 1000. 33 years ago also, when Aston Manor was a more pleasant residential area and one more adapted for young couples starting in life, the birth-rate was 43 per 1000. With increasing population and greater crowding of the area the birth-rate has fallen to 26 per 1000, but the falling birth-rate is compensated for, to a certain extent, by the declining infantile mortality. The coincident fall of the death-rate and birth-rate is so commonly recorded in the reports of health officers that it is quite pleasant to note the maintenance of a high birth-rate, 34·1 per 1000, at Sedgely. There cannot be any doubt, however, that a birth-rate 6·2 per 1000 higher than that for the whole country must be due to quite exceptional conditions.

Sewage Farm and Diphtheria.

In his report to the Castle Bromwich rural district council the medical officer, Dr. A. Bostock Hill, drew attention to the fact that nine cases of diphtheria had occurred at Minworth. Many of these cases lived close to the edge of the sewage farm and the land close to the houses was covered with sewage. The medical officer evidently believes that the disease was due to the sewage, for he has requested the engineer of the Birmingham, Tame, and Rea drainage board to discontinue sewaging the land referred to. He is assured that as soon as sufficient bacterial plant is available the present saturated condition of the land will be done away with. It will be interesting to note, when this is accomplished, whether or not the amount of diphtheria in Minworth is decreased.

The Origin of a Hospital.

The origin of the Wolverhampton Hospital as explained by the chairman (Mr. A. C. Twentyman) is extremely interesting. Mr. George Briscoe fell from a chair on which he was standing whilst he removed some dust from one of his pictures and as a result of the fall broke his leg. Whilst he was laid up in bed he thought of the condition of others, less fortunate than himself, who could not secure the attentions which he enjoyed; and when he recovered he held a consultation with Mr. H. Rogers and they agreed to subscribe £500 each to found a hospital. That was the commencement of the Wolverhampton Hospital and it may be fairly said that it was initiated by an accident. At the last annual meeting of the board of management it was stated that the income for 1905 had been £10,156, or £372 less than the previous year. The average number of patients was 142 and the cost per bed occupied was £57 9*s.* 5½*d.*

Vaccination and Boards of Guardians.

There are signs that a determined attempt will be made to bring about the repeal of the compulsory vaccination Act. Complaint with regard to the working of the Act has been made at the meetings of the Birmingham board of guardians and also at the meeting of the Aston board. At the latter meeting the vaccination committee reported that it had under consideration a letter from the St. Giles's, Camberwell, board of guardians asking for support to the proposition that the Local Government Board should be requested to take steps to promote legislation for the repeal of the Act.

Proposed Medical Golfing Society.

All means that bring members of the medical profession into social contact with each other are to be welcomed and in this connexion may be mentioned the Medical Golfing Society of the Birmingham district, which has just been established. If the necessary details can be arranged there is no doubt that a strong match-playing team can be got together and some very interesting matches with other societies might be played.

March 20th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Donations to Liverpool Hospitals: Admission of Lady Students at the Stanley Hospital.

SEVERAL gratifying announcements were made by the treasurer at the annual meeting of the subscribers to the Liverpool Stanley Hospital on March 9th, over which the Lord Mayor presided. It was stated that Mr. W. P. Hartley's offer of £1000 towards new kitchens and a laundry had been met by the subscription of the full amount required and the work had already commenced. To reduce the debt of the hospital of upwards of £2000 an anonymous donor had given £1000. A family "whose name was a heritage and a household word in Liverpool" had undertaken to provide accommodation for lady medical students and a lady honorary medical officer. Sir Robert Hampson (the President of the hospital), in alluding to the admission of lady students to the practice of the hospital, called it a

new departure in Liverpool; in this statement he was in error, as pointed out by Sir James Barr who was present at the meeting. Sir James Barr said that he was pleased to hear that the Stanley Hospital proposed to start a female medical school, but he must correct the remark of Sir Robert Hampson that Liverpool had hitherto made no provision for such a school, the Liverpool Royal Infirmary having done so two years ago. The Royal Infirmary had one lady student at present and he hoped that there would soon be a larger attendance, but there would not be the slightest jealousy on the part of the Royal Infirmary at the opening of a similar school at the Stanley Hospital.—The late Mr. D. C. Keeling of Blundellsands and Liverpool bequeathed £5000 to local charities, including £800 to the Stanley Hospital, £500 to the Royal Southern Hospital, £500 to the Infirmary for Children, £250 to the David Lewis Northern Hospital, and £100 each to the Hospital for Women, Shaw-street, the Hospital for Consumption, and the Hospital for Cancer and Skin Diseases.—At the last meeting of the city council the recommendation of the finance committee was carried by a large majority "that in the next application to Parliament there be included power to borrow and contribute a sum of £5000 to the rebuilding of the Children's Infirmary in Myrtle-street, subject to the trustees of the infirmary raising the balance necessary to complete the rebuilding of the infirmary."—Mr. Louis S. Cohen, formerly Lord Mayor of Liverpool, has promised to contribute £200 towards the new Dental Hospital and 5 per cent. on further moneys subscribed for the purpose beyond £4000, the total amount required being estimated at £10,000. The honorary staff of the hospital have among them so far promised upwards of £500.—The sum of £500 has been placed in the hands of the treasurer of the Bootle Borough Hospital for the purpose of endowing a bed in the adult male medical ward in memory of the late Captain Hewett, marine superintendent of the White Star Line, the contributors being Mr. J. Bruce Ismay, Mr. H. A. Sanderson, Mr. William Imrie, Mr. W. S. Graves, and Mr. James H. Ismay.

The Hospital for Women, Shaw street.

The annual report of this hospital stated that the number of in-patients during the year was 818, as compared with 749 last year; the number of new cases in the out-patient department was 2660, as compared with 2336 in 1904. The total number of attendances in the out-patient department was 6106. The committee acknowledged the receipt of a number of handsome donations and subscriptions, including a donation of £442 from the Hospital Sunday Fund, and also a contribution of £1200 from Mrs. John Bingham to endow a bed in memory of her late husband. The Countess of Derby also contributed £50. The hospital is in the fortunate condition of being absolutely free from debt.

Southport and the Declining Birth-rate.

Several significant features appear in the annual report of the medical officer of health of Southport. The birth-rate, which had been gradually falling since 1877, when it was 33·87 per 1000, has risen to 18·02 for the year 1905, as compared with 17·51 in 1904. Park ward, where the retired residential well-to-do class resides, has the very low birth-rate of 5·61, but the lowest infantile death-rate—viz., 96. On the other hand, it has the highest cancer death-rate—viz., 1·39 per 1000. Scarisbrick and Sussex wards, two working-class areas, by contrast show a birth-rate of 30·92 per 1000—nearly six times that of Park ward—an infantile death-rate of 142, and the low cancer death-rate of 0·85 per 1000.

The Isolation of Consumptives: Action of the St. Helens Health Committee.

The question of the isolation of consumptives engaged the attention of the St. Helens health committee on March 14th. The chairman (Alderman Forster) referred to the report which had been issued by the medical officer of health and said that it did not reflect particular credit on St. Helens. The medical officer of health had carefully considered the whole situation as to the manner of dealing with cases of consumption in the borough and the report, though not actually stating so, would suggest that St. Helens should proceed on the lines of Brighton and Manchester. Those places had used the vacant accommodation in their isolation hospitals for the purpose of receiving the gravest cases of consumption, with the object of educating the patients in the matter of looking after their own health and preventing the spread of the disease. The medical officer of health had informed him that there were a large number of cases in poor homes where the patients were not properly isolated. No great improvement could be expected to result unless it were possible to isolate patients in their own homes or to take them out of their surroundings and to afford them some treatment in the hospitals, and also some education in the management of the disease. After some discussion, the committee approved of utilising the spare accommodation at the St. Helens isolation hospital for the benefit of consumptive cases. The medical officer of health was instructed to make inquiries from other towns and to report the result at the next meeting of the health committee.

The Medical Officer of Health of Birkenhead.

At the last meeting of the Royal Irish Academy Dr. Robert Sydney Marsden, the medical officer of health of Birkenhead, had the honour of being elected a member of the Academy.

March 20th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Cardiff Infirmary.

AT the annual meeting of the governors of the Cardiff Infirmary some alterations were made in the rules relating to the election of the honorary medical staff. The effect of the alterations is that an addition may be made to the honorary staff of one or more surgeons or assistant surgeons to the ear, nose, and throat department. The gentlemen who are elected to these positions will be required to confine themselves in their private practices to diseases of the ear, nose, and throat.

Aberystwyth Board of Guardians and its Medical Officer.

An account of the difficulties which have arisen between the Aberystwyth board of guardians and Mr. G. R. E. Bonsall, the medical officer of the workhouse, has already appeared in THE LANCET. Mr. Bonsall resigned the appointment at the workhouse on account of the smallness of the remuneration but refused to resign his appointments as district medical officer and public vaccinator. The guardians wished to have him removed from their service but the Local Government Board declined to interfere otherwise than by insisting that the vacancy at the workhouse must be filled. The guardians then made an appeal to the infirmary board and after considerable discussion the infirmary board consented to allow Mr. Edwards, the house surgeon, "to attend all emergency cases at the request of the master." The arrangement will terminate in the first week in April. When the board met on March 19th Mr. Bircham, the Poor-law inspector for Wales, informed it that it must comply with the law either by reappointing Mr. Bonsall at an increased salary or by advertising the appointment, which would amount to the same thing, as none of the local medical men will either apply for the appointment or render any assistance. There was, he said, nothing in either of the letters sent to London which would justify the Local Government Board calling upon Mr. Bonsall to resign and the most sensible way would be not to prolong the difficulty but to proceed to carry out the law. Mr. E. J. Evan described the action of the Local Government Board as an attack upon their principles and he advocated an attitude of defiance. Other speakers followed in the same strain, after which Mr. Joseph Parry moved, and Mr. W. Morris seconded, that the board should reappoint Mr. Bonsall at a salary of £40; the motion was, however, defeated by 20 votes to 11, and another request that Mr. Bonsall should be dismissed was made to the Local Government Board.

The Supply of Artificial Teeth to Hospital Patients.

It appears to have been the custom for some years past to provide patients of the Herefordshire General Hospital, on the recommendation of the medical staff, with artificial teeth. The cost of this has reached a sum amounting to between £60 and £70 a year and the committee of management in its desire to reduce the expenditure of the institution has now decided to abolish the practice except in very urgent cases. This decision has been come to after ascertaining that the custom does not prevail in other hospitals of about the same size as that at Hereford, where there are 100 beds, including those at Shrewsbury, Salisbury, Worcester, Gloucester, and Newport (Mon.).

Isolation Hospital Accommodation at Barnstaple.

The borough of Barnstaple has a population of 15,000 persons and in his report for 1905 the medical officer of health (Mr. J. R. Harper) points out the great disadvantage under which a town of this size labours in not having an isolation hospital. The present method, he says, of attempting to isolate cases of infectious disease in a house consisting of two or even three bedrooms where there is, as in many instances, a large family is almost hopeless. In 1903 and 1904 there were outbreaks of scarlet fever which could have been very materially lessened if a fever hospital had been available, while of the 26 cases of typhoid fever which occurred in the borough in 1905 no less than eight were clearly infected from previous cases, a circumstance which could hardly have happened under strict conditions of isolation.

March 19th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Appointment of Lecturer on Gynæcology in the University of Edinburgh.

THE University Court, on the recommendation of the Senatus, has appointed Dr. A. H. F. Barbour to be lecturer on gynæcology, both systematic and clinical, to the University of Edinburgh. Owing to the retirement of Dr. D. Berry Hart from the Royal Infirmary Dr. Barbour had become the senior gynæcologist to that institution and this position he continues to hold. As was mentioned in THE LANCET some weeks ago, a difficulty had arisen between the University and the infirmary regarding this appointment and it is satisfactory to see that the conferences which were held have resulted in the University accepting as its lecturer the senior gynæcologist to the infirmary. In some quarters it was thought that the University would have been induced to appoint the two infirmary gynæcologists in charge of wards as joint lecturers, so that the students might attend either without going outside the University. This it apparently has not been able or willing to do.

Changes in the Gynæcological Department, Edinburgh Royal Infirmary.

Dr. Berry Hart's retirement from the gynæcological department of the Royal Infirmary followed a few months after Professor A. R. Simpson's retirement. As a result of these retirements the two senior assistant gynæcologists, Dr. Barbour and Dr. N. T. Brewis, have been promoted to charge of wards. This has made at least one vacancy for an assistant gynæcologist and for this post there are so far three candidates—namely, Dr. James Haig Ferguson, gynæcologist to Leith Hospital; Dr. William Fordyce, assistant gynæcologist to Leith Hospital; and Dr. E. W. Scott Carmichael, assistant surgeon to the Royal Hospital for Sick Children, Edinburgh.

Appointments to the Pathological Department, Edinburgh Royal Infirmary.

The managers have appointed Mr. Henry Wade and Dr. W. E. Carnegie Dickson assistant pathologists for morbid anatomy, and Dr. W. T. Ritchie assistant pathologist for clinical pathology to the Royal Infirmary.

Royal Hospital for Sick Children, Edinburgh.

At the annual meeting of the friends of the Royal Hospital for Sick Children, Edinburgh, held on March 14th the chairman, Mr. Hall Blyth, reported a steady increase in the work of the hospital. The in-patients had numbered 1952, as compared with 1711 in the previous year. Of that number 388 were infants under one year of age, an increase of 89, and 314 were between the ages of one and two years, an increase of 82. The increase in the number of infants, as had been pointed out before, entailed increased expenditure. In the out-patient department there had been 26,966 attendances, a decrease of 2053 as compared with the numbers of the previous year. Of this decrease 2003 were accounted for by fewer re-attendances in surgical cases. With regard to the financial position of the hospital the directors had to report a decrease of £216 in the annual subscriptions. The total expenditure, in spite of the increase in the number of in-patients, had decreased by £82, having been £8598, as against £8680 in the previous year. The chairman went on to make a strong appeal for funds for the establishment of a convalescent home in connexion with the hospital. The directors had long felt the need of such an institution, and the matter was being brought forward at present as they had received a legacy, a part of which consisted of a house and grounds which would form an ideal site for a convalescent home. The chairman, in conclusion, referred to his approaching retirement from the chairmanship of the board. The Right Hon. Lord Dunedin, Lord Justice General, then moved a proposition relating to the support of the hospital and suggested that their gratitude for all that Mr. Hall Blyth had done for the hospital might be fittingly shown by responding to his appeal for a convalescent home.

The Liberton Cottage Hospital.

The directors of the Longmore Hospital for Incurables have for some time past been feeling the need of further accommodation for the general class of incurable cases and had decided that, should any such extension be made, the buildings should be in the country within easy reach of the city. A legacy of £20,000 has been received for the purpose of building and furnishing a small hospital for the treatment of incurable cases of consumption. £6000 to be expended on the site and buildings, and £14,000 to be capitalised as an endowment fund. In carrying out the intention of this bequest the directors have also provided accommodation for 26 general cases and the combined result is to be known as the Liberton Cottage Hospital. The hospital stands in its own grounds of four acres. It contains two wards for tuberculous cases, each containing seven beds and two cots; two general wards, each containing ten beds; and four small private wards for paying patients, thus giving accommodation for 42 patients. The staff will consist of a matron, five nurses, and five servants. The cost for site, buildings, and furnishings has been over £20,000, or about £500 per bed.

A Vote for Women Graduates.

The women graduates of the Scottish universities are taking steps to obtain recognition of the right which they claim to vote in Parliamentary elections.

West of Scotland Marine Biological Association.

The annual report of this association has just been issued and according to it the association seems to be in a very flourishing condition. The main extensions to the marine station at Millport have been completed at a cost well within the sum generously offered by Mr. James Coats, jun. The balance will be devoted to the installation of an additional salt water-supply, rendered necessary by the great extension of the aquarium. It is proposed to erect for this purpose a windmill and pump on the point opposite the station and to lay the necessary piping. The endowment fund now stands at over £854.

March 20th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Public Health of Dublin.

ON March 14th the deaths during the previous week of persons resident in the Dublin registration area were reported to be 208, equivalent to an annual rate of 24·6 per 1000. No fewer than 39 deaths were due to tuberculous disease. As regards infectious diseases no features of special interest have been reported from the general hospitals.—The committee of Cork Street Fever Hospital held its annual meeting on March 8th when the medical superintendent stated that the admissions were lower than last year owing to the decline of enteric fever and scarlet fever.

Longford County Infirmary.

The difference of opinion which has existed during many months between the committee of the Longford County Infirmary and the resident surgeon was considered at the monthly meeting of the board on Feb. 7th and a motion, proposed by the Most Rev. Dr. Hoare, Roman Catholic Bishop of Ardagh, was adopted, charging Mr. Mayne with disobedience and insubordination while calling for a Local Government Board inquiry. At first sight the terms of the indictment seem unsuitable for a medical man who has held a high position in the county Longford for a long period and who has filled the office of surgeon to the infirmary for 29 years. The charges were,

moreover, of a trivial nature and none of them impugned in the slightest degree the character and efficiency as a surgeon of Mr. Mayne. The Local Government Board inquiry commenced on March 12th, the proceedings being opened by Surgeon-Colonel D. E Flinn and after three days' hearing with the examination of Mr. Mayne and many witnesses, concluded on the 15th. The matter has been fully reported in the Dublin and other daily papers and has caused much interest. The award of the Local Government Board has not yet been given.

The Royal University of Ireland.

The Chief Secretary for Ireland (Mr. Bryce) on March 14th said in the House of Commons, in reply to Mr. Lonsdale, that Lord Meath entertained doubts as to the competence of the Senate under the charter of the Royal University to maintain order at the conferring of degrees and in consequence he proposed that the charter should be amended or that he should be relieved of the responsibility of maintaining order The Government informed Lord Meath that it was advised that the Senate had the power to maintain order and to take all steps necessary to that end and that an amendment of the charter for that object was therefore unnecessary Lord Meath, however, continuing doubtful as to the Senate's power, resigned the chancellorship, to the regret of the Government. The action, or want of action, of the Senate has caused many people to sympathise with him. With reference to the resolution passed by the Senate on March 7th in regard to the report of the Royal Commission it now appears that it was passed by a majority and not unanimously. At a meeting of the council of the Royal University Graduates' Association held on March 13th resolutions condemning the resolutions passed by the Senate on March 7th were unanimously adopted.

March 20th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Pernicious Anæmia treated by the X Rays and Anti-diphtheritic Serum.

M. Renon and M. Rixier have recently been studying the effects of arsenic, of the x rays, and of anti-diphtheritic serum in a patient suffering from pernicious anæmia. Arsenic, which gives excellent results in ordinary anæmia, completely failed in the patient in question. On the other hand, good results accrued from the employment either together or separately of the x rays and of injections of anti diphtheritic serum. The two observers who communicated their results to the Hospitals Medical Society on March 8th insist less upon the cure of the patient, for amelioration in such cases is very transitory, than upon the increase in the blood elements which occurred under the influence of the two agencies above mentioned. Examinations of the blood carried out at intervals for some hours after the sittings for the x rays and the injections of the serum showed that the stimulation of the blood-forming organs was evidenced by a very notable increase in the number of red blood corpuscles and by an eosinophilia which was remarkable for its constancy. These results, which were so much alike, although obtained by procedures apparently very different, showed the striking parallelism which existed in the mode of action of the two therapeutic agents. The presence in the blood of leucotoines (products of the destruction of white blood cells by the x rays) or of hæmolysine following the injections of antitoxic serum is without doubt an indispensable and necessary factor for determining the reaction of the blood-forming organs.

The New Chair of Clinical Therapeutics.

On Thursday, March 8th, in the theatre of the Faculty of Medicine at the Beaujon Hospital, Professor Albert Robin inaugurated with an eloquent address a new chair of clinical therapeutics which has been given to the University of Paris by the Duc de Loubat. On the morning of Sunday, the 11th, at 10 o'clock, in the same amphitheatre, a remarkable ceremony organised by the pupils and friends of Professor Robin was held. To mark his advancement to the rank of Commander of the Legion of Honour, and at the same time to celebrate his taking the chair of clinical therapeutics, a gold medal which was a beautiful work of art from the hand of the master engraver, Vernon, was presented to him in the presence of M. Etienne, Minister of War. M. Armand Gautier, the President of the Academy of Medicine, in the name of the committee, Professor Joseph Renaut of Lyons, in the name of his personal friends, and Dr. G. Beaudouin, the doyen of the former internes of Professor Robin, respectively addressed him and offered him their warmest congratulations. To these speeches Professor Robin, who was greatly moved, responded in a few well chosen words On the obverse of the medal is the singularly appropriate motto which was composed for the occasion by Professor Renaut, "Lauriger ense prius, medicinaque amplius ultra." Among those present were the Dean of the Faculty of Medicine, M. Debove, Professor Pozzi, and the following Doctors: Second, Richelot, Maygrier, Bazy, de Fleury, Blondel, and Cazalis, M. Paul Deschanel, and M. Henri Monod, together with a large number of the public who attended with the view of offering to Professor Robin their hearty congratulations.

Gunshot Wounds of the Intestine.

On March 5th M. Picqué read before the Academy of Sciences, on behalf of M. Piédi, a communication relating to penetrating gunshot wound of the abdomen. M. Piédi had operated five hours after the accident and he found the intestine perforated in 15 places, a state of things which necessitated 13 different sutures and a resection of a portion of the gut. In order to operate in the most rapid way possible M. Piédi had used the purse-string suture. In cases of this kind early surgical intervention is the most important factor from the point of view of success and M. Piédi, although there were no definite symptoms, had every reason for operating at once. M. Chaput said that he had once operated on an alcoholic patient suffering from a gunshot wound of the abdomen and had found 15 perforations of the intestine which he had closed by purse string sutures. The patient lived for 20 days but finally died from pulmonary congestion. At the post-mortem examination, however, M. Chaput found that all the sutures had held perfectly.

Poisonous Beans.

At the same meeting of the Academy of Sciences M. Guignard read a note upon Poisonous Beans about which a great deal is being said at the present time. The bean is an American species and the botanical name is Phaseolus lunatus. It is very commonly found among forage in all tropical regions of the world and a large quantity of these beans has recently arrived in Europe under varying names, such as Burma beans, Java haricots, dwarf haricots from India, and the like. The shape and colour of these beans are very variable and afford no help in their recognition. All of them are capable of giving prussic acid in proportions according to the degree of culture of the bean but which often attains sufficient proportions to kill a man. Already cases of poisoning from these beans have been observed in Holland and in Germany. In Paris there are said to be 160,000 kilogrammes which have cleared the *octroi* but at present no deaths have been observed except among some horses of a parcels delivery company. The raw beans are the most dangerous, for the prussic acid does not exist as such in the beans but, as in the case of bitter almonds, it is only formed when the grain is ground up with moisture and the two elements which they contain—viz., amygdaline and emulsine—react so as to form prussic acid. Prolonged cooking greatly minimises the danger and at the same time gives warning of it, for the prussic acid is given off and is easily recognised by its smell Chemists have found a very sensitive reaction for the presence of prussic acid which consists of a piece of paper moistened with picric acid and carbonate of sodium, which paper becomes of a pinkish-purple colour in the presence of traces of prussic acid, but the odour given off by the beans when they are moistened is perhaps the best and most simple test of its presence.

March 19th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Suicidal Poisoning by Lysol.

THE Federal Council has decided to add lysol to the list of drugs which may not be sold at the pharmacies to the public without the prescription of a qualified medical practitioner. The reason is that lysol has lately become the poison most used by would-be suicides and the Berlin news-

papers almost daily report a case where some unfortunate person has swallowed a quantity of the drug. Although other poisons, such as potassium cyanide and laudanum, are of a more rapid and less painful action they are now seldom used in comparison with lysol, as the latter is neither expensive nor difficult to procure. The number of attempted suicides by lysol may be inferred from the fact that one of the three medical clinics of the Charité Hospital in Berlin had to admit no less than 24 cases of lysol poisoning within one year. During the same period the number of attempted suicides by all the other poisons treated in this clinic was only 22, among which the poisonous agent was corrosive sublimate in ten cases, hydrochloric acid in two cases, morphine in three cases, potassium cyanide in three cases, and carbolic acid, sulphuric acid, potassium permanganate, and coal gas in one case each. A description of the phenomena of lysol poisoning was recently given by Dr. Kirchberg in the *Aerztliche Sachverständigen-Zeitung*. The most striking symptom is a deep sopor which, according to the statement of the friends of the patients, as a rule begins within a few minutes. Vomiting, convulsions, and diminution of the reflexes occurred in a few instances only. The state of sopor was almost invariably accompanied by serious disturbance of the circulation, the pulse becoming weak, arrhythmic and much accelerated; it sometimes even disappeared entirely. The respiration became superficial and slow and cyanosis sometimes appeared. In all the patients the mucous membrane of the palate, the pharynx, the tongue, the lips and their surroundings was corroded and became of a whitish grey colour. At the necropsies it was found that the lining membrane of the larynx, the bronchi, and the gastro-intestinal canal was also corroded. Only a few patients complained of severe pains; the majority had only a slight burning in the mouth and pharynx and a pain in the stomach. The urine was of a green or black colour; albuminuria was observed in one case only and casts never. Broncho-pneumonia was an occasional sequel but stenosis of the œsophagus never occurred, as the corrosive action of the poison on the mucous membrane is rather superficial. When the patient has survived the first grave symptoms the prognosis is relatively good. It is impossible to ascertain the minimum fatal dose of the poison, as this depends on the resisting power of the patient. The treatment consists in the use of the stomach pump to remove the poison, after which the stomach is irrigated until the returning fluid is no longer opalescent and has lost the smell of lysol. If some hours have elapsed since the taking of the poison, so that a considerable quantity has probably been absorbed, calcined magnesia should be administered to produce insoluble, non-absorbable combinations. The cardiac debility is to be treated by tonics, such as camphor oil, and a light diet is necessary afterwards because of the lesions of the gastro-intestinal canal. Among 24 cases that are known there have been only two deaths which occurred in patients who were taken to the hospital in a hopeless state. The necropsy showed corrosion of the palate, the œsophagus, the stomach, and the jejunum, bronchitis and incipient nephritis. Dr. Kirchberg is of opinion that the public sale of any new chemical compound without a medical practitioner's prescription should be prohibited until an official commission has decided that it is not poisonous.

Health of the Prussian Army.

At a recent meeting of the Hygienic Society of Berlin Surgeon General Dr. Werner read a paper on the Health of the Prussian Army and it has since been published in the *Deutsche Medicinische Wochenschrift*. He said that in 1903 the death-rate of the army was 2·1 per 1000, whilst among the civilian population at the ages between 20 and 25 years, corresponding to the average age of the soldier, it was 5·2 per 1000. The improvement in the hygienic conditions of the army became evident when the former mortality of the military and civilian population was compared. In the "twenties" and "thirties" of the nineteenth century the death-rate of the army was 14 per 1000, while among civilians between 20 and 25 years of age it was 10·5 per 1000, and it was only in 1880 that the mortality of the army became as low as that of the civilian. Trustworthy statistics of the diseases occurring in the army are available from the year 1873 onwards and Dr. Werner has given the following extracts from them, the figures quoted in connexion with the respective years being ratios per 1000: infectious and general diseases, 92·4 in 1873 and 29·5 in 1903; nervous diseases, 5·4 in 1873 and 6·0 in 1903; diseases of the respiratory organs, 73·4 in 1873 and 82·3 in 1903; diseases of the circulation, 10·9 in 1873 and 12·7 in 1903; diseases of the organs of nutrition, 153·5 in 1873 and 89·4 in 1903; diseases of the uro-genital system (venereal diseases excepted), 7·3 in 1873 and 5·1 in 1903; venereal diseases, 38·4 in 1873 and 19·4 in 1903; diseases of the eyes, 36·6 in 1873 and 15·0 in 1903; diseases of the ear, 6·9 in 1873 and 12·4 in 1903; diseases of the skin, 161·9 in 1873 and 145·1 in 1903; diseases of the motor organs, 30·2 in 1873 and 67·3 in 1903; wounds, 146·4 in 1873 and 126·6 in 1903; other diseases, 1·1 in 1873 and 0·42 in 1903; and men under observation, 5·7 in 1873 and 8·6 in 1903. The above figures show that diseases of the nervous system and of the circulation have slightly increased, corresponding to an increase of the same complaints among the civilian population. The increase of the diseases of the respiratory organs is caused by the prevalence of influenza during the last few years; the increase of disease of the motor organs is mainly an artificial result of rearrangement of the figures and of a more careful diagnosis by the use of x rays in tender states of the feet. All the other diseases have considerably decreased, so that the total number of cases treated has fallen from 1312 per 1000 men in 1873 to 620 per 1000 men in 1903. Dr. Werner then discussed the reason of the satisfactory hygienic condition of the army during recent years and came to the conclusion that the better hygienic training of the Army Medical Corps has had a good deal to do with it. Until 1875 the training of the army medical officers terminated, as a rule, with the State examination. Since that year, however, systematic post-graduate study, consisting in attendance at special courses and lectures in Berlin and in other university towns, has been made compulsory, so that every army medical officer has to go through a series of courses and lectures on an average every fourth year and in the lower grades even more frequently. Moreover, since about ten years ago a great many medical officers have been appointed by special arrangement with the civil authorities as extraordinary assistants to university and municipal hospitals and also in hygienic and bacteriological laboratories, where they remain for two or three years engaged in scientific work, without having to do any military duty. These men are then placed at the head of the hygienic laboratories of the army, which are established for every army corps and have to supervise the hygienic conditions of their respective military districts. Great improvements have also been made in the construction of barracks, where the pavilion system has been adopted instead of the unhygienic buildings of a former period. The same improvements have been made in military hospitals, where special stress is laid on the portable barracks which are supplied to the troops in the case of an epidemic. In garrison towns where the usual water-supply is of doubtful purity a supply has been obtained by artesian wells and other means. The report further states that during the great cholera epidemic in 1892 the various garrisons were almost exempt from the disease. The food of the soldier was in every garrison under the supervision of a commission which included the army medical officers and bathing arrangements were liberally provided in new barracks. When a comparison is made between the attack-rate and the death-rate from enteric fever in the German army on the one hand and the armies of some other nations on the other it is found that the figures are respectively 0·85 and 0·09 per 1000 for Germany, 4·3 and 0·59 per 1000 for France, 1·9 and 0·25 per 1000 for Austria, and 4·1 and 0·78 per 1000 for Italy. The malaria attack-rate has decreased from 31·7 to 0·16 per 1000, so that the disease has practically disappeared in the army. With regard to venereal disease in the different armies it is stated that the ratios per 1000 of men suffering from these diseases were 19·4 in the German army, 29·3 in the French army, 57·5 in the Austrian army, 91·5 in the Italian army, and 122·7 in the British army. The report concludes that although the hygienic improvement of the army was enormously expensive, there was a compensating advantage in the fact that fewer men had to be admitted to the hospitals than formerly; the new hospitals might therefore be on a smaller scale, and there would be a considerable saving in the cost of medical treatment. Finally, a comparison of the death-rates of 1873 and 1903 showed that in the latter year there was an actual saving of 2462 lives.

March 19th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

The Persian Festival of Hosain.

THIS is now the first month of the Mahomedan year and the tenth day is important for several reasons, one of which is that on that night the Persian Shiite Mussulmans celebrate the death of Hossin, the grandson of the Prophet Mahomet. About 9 o'clock we were ushered by our Persian hosts into the large courtyard of a house near the native bazaars which for 13 days in this month is specially set apart for this festival. On these sacred days free dinner and supper are given to any poor who choose to come, irrespectively of race and creed. The courtyard was covered in with tenting and brilliantly lighted with chandeliers suspended from the houses surrounding it, while the windows and ledges were ornamented with mirrors and candlesticks, between which were framed illuminated texts and strips of old embroidery decorated with Persian writing. A pulpit draped in black formed the centre-piece of the decorations and faced the windows of the house which were crowded with sight-seers of every nationality. Seats were arranged all round the stone yard, leaving as much space as possible in the centre, and to while away the time coffee and cigarettes were handed round and an old sheikh chanted to us historical romances. The procession, which had started about a mile away near the mosque where Hosain's head is said to be buried and which on this night is jealously guarded by the Egyptian Sunnites to prevent its being entered and defiled by the bloodstained Persians, always finishes at the courtyard where we were sitting. Presently the shouting of the crowd outside reached us and above all the fierce cries of the fanatics who were torturing themselves in honour of their martyred lord. The pioneers of the procession were policemen and kawasses, then followed a number of men carrying banners on long poles, school children with candle-lanterns, several officials of the Persian Committee headed by the Consul-General, and a great number of shouting and excited youths. This concourse would have filled the yard if they had not dexterously been passed through the house to a street beyond. The yells of the performers came nearer and nearer till they were evidently at the entrance, where order could only be maintained by a free use of the stick. First came four brawny men stripped to the waist who punished their shoulders with heavy chains swung over their heads as they and the crowd shouted "Oh, Hosain." Dozens of men and boys had bared their left breasts, already ecchymosed scarlet from the resounding whacks which they continued to give themselves with the open right hand. Two ponies were led rapidly through the yard on which were the two boys clothed in white with bleeding heads, who represented Hosain and his brother Hassan, and then came 40 men, also dressed in white, with heads dripping with blood from wounds inflicted with the swords which they flourished. Three of them fainted from loss of blood and had to be carried away and all were in a frenzy of religious fervour aided by previous hasheesh. The cuts were mostly on the vertex of the scalp which had been shaved; all had their heads bare and some of them presented a very ghastly spectacle with blood constantly dripping on their long white garments to their feet. The Consul-General induced them to desist after a time, their swords were taken from them, and they disappeared to have their wounds dressed and to smoke hasheesh. No surgeon or barber is provided but there are servants who wash the wounds and apply ground coffee to check the hæmorrhage. Pads and bandages rolled in the form of turbans complete the dressing and many of them returned to the yard to hear the sermon—in air which already smelt strongly of blood. Those who are faint have pounded sugar as well as coffee applied to their wounds and are induced to lie still, but it is said that all of them are able to walk about on the following day. Certainly I have never heard of any of them being brought for treatment after this annual procession. When quiet was restored the worshippers squatted on their heels in the courtyard and the solemn service of atonement took place. It began with much chanting to the chorus of—

"Oh, my friend; oh, Hosain,
Light of my eyes, oh, Hosain.

Then followed a sermon from the pulpit which soon reduced most of the congregation to tears and loud sobbing. It is always an emotional and interesting spectacle, but this year there were fewer performances than usual and certainly less fanaticism. All these barbarous sights are gradually dying out, but 20 years ago in a procession in honour of Mahomet a man has been seen walking in a procession with his bowels on a plate, after having ripped himself up!

Army Bacteriological Laboratory.

One of the successful issues of the Advisory Board has been the appointment of special sanitary officers to the British Army, and to some important garrisons a laboratory has now been granted. That of the army of occupation in Cairo under Major F. W. Hardy, R.A.M.C., consists of two rooms on the roof of the headquarters office. Cemented floors, oil painted walls with rounded corners, a gas incubator, a steam steriliser, and a trained orderly have been provided. The microscope table has a glass top with alternate strips of black and white paint under the glass. Here much work is done for the two garrisons of Cairo and Alexandria—agglutination trials for enteric and Malta fevers and analyses of water, food, beer, spirits, and so on. But the War Office gives the unfortunate bacteriologist no books, no journals, only an occasional blue-book. How is he expected to keep abreast of the times? I may here point out that there is no medical library of any kind for the army surgeons in Egypt, though both the Egyptian and Soudanese Governments understand the value of supplying their medical advisers with a few standard books of reference.

The Nile Flood.

Captain Lyons, R.E., who is, I think, the first resident of Egypt to become a Fellow of the Royal Society, has lately read a paper before the Cairo Scientific Society on the meteorological conditions which probably affect the annual flood. He maintains that the flood is entirely due to rainfall in Abyssinia, which is caused by the East African monsoon. Records of past floods show the range in time and amount of this rainfall. The East African monsoon is caused by conditions similar to those of the Indian monsoon, yet the physical characters of Africa make it weaker and we can compare the two rainfalls of Abyssinia and Western India. Low-pressure conditions are naturally favourable to precipitation and a close relationship is found to exist between the Nile floods and the atmospheric pressure over North-East Africa. Various methods have been proposed for forecasting the Nile flood, but the safest is to follow the northward movement of the rains on the African continent from month to month and to study as thoroughly as possible the distribution of winds and pressure over a wide area. In order to study this and kindred phenomena many stations have been erected in the last five years, stretching from British Central Africa to the Mediterranean, but unfortunately there is as yet no trustworthy information from Abyssinia.

Cairo, March 11th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Protestant Hospital for the Insane, Quebec.

THERE were admitted into the wards of the Protestant Hospital for the Insane at Verdun, Quebec, during the year 1905 190 new patients, a large proportion of whom were persons born outside the Dominion of Canada. Of the number so admitted 103 were men and 87 were women, making, with those in the institution at the close of the previous twelve months, a total of 654—343 men and 311 women. Of the patients received 113 were native born Canadians, 48 of other portions of the British Empire, and 29 of foreign birth. Dr. Burgess, the medical superintendent, states that there could be no more striking commentary on the inefficiency of our immigration laws than this record. The gross receipts on maintenance account amounted to $107,447 and the expenditure to $107,496.

The Chair of Ophthalmology at McGill University.

Dr. J. W. Stirling of Montreal has been appointed to fill the chair of ophthalmology in McGill University, rendered vacant through the death of the late Dr. Frank Buller. Dr. Stirling has also been appointed to the position of ophthalmic surgeon at the Royal Victoria Hospital which is in connexion with the medical department of McGill University, resigning from a similar position in the Montreal General Hospital. Dr. Stirling was born in Halifax in 1859 and graduated

M.D., C.M., at the University of Edinburgh in 1884. Following his graduation he was house surgeon at the Royal Infirmary, Edinburgh, under Dr. Argyll Robertson. Subsequently he spent two years studying in Vienna and Berlin. Returning to Canada in 1888 he commenced practice in Montreal and became connected with Bishop's medical faculty (now amalgamated with McGill), a position which he resigned seven years ago to accept a lectureship in ophthalmology at McGill.

Proposed Nurses' Association of Ontario.

The trained nurses in the province of Ontario have a Bill before the legislature now in session which seeks incorporation for them as a body under the name of the "Graduate Nurses' Association of Ontario." The government of the body is to be vested in an executive council of 15, four of whom are to be medical men. In regard to membership, it proposes that all nurses resident in the province of Ontario who have been trained in a hospital of good standing for two years or more shall be entitled to entrance upon the books of the association. Power is also sought to prescribe courses of study, to hold examinations, and to issue diplomas.

Royal Alexandra Hospital, Montreal.

The Royal Alexandra Hospital, Montreal, for the treatment of infectious and contagious diseases occurring among the Protestant population of that city, is rapidly nearing completion and will soon be ready for occupation. There are three distinct pavilions for the treatment of cases of measles, scarlet fever, and diphtheria, the original plan of having a pavilion for cases of erysipelas having been abandoned. A medical board which will be a consulting board is now being organised. It will consist of three members and have a representative from the Royal Victoria, General, and Western Hospitals. Dr. J. C. Fyeche, a recent graduate of McGill University, has been appointed to the position of medical superintendent and is at the present time prosecuting studies in infectious diseases under Dr. McCallum of the Boston City Hospital. So far $149,637.70 have been subscribed and collected and about $100,000 are still required for the completion of the work. When completed Montreal will pay the hospital $15,000 a year for 25 years, together with a dollar a day for all patients above the number of 20 each day. Dr. T. G. Roddick is the president of the board of governors.

Analysis of Patent Medicines.

A number of well-known patent medicines and headache powders on the Canadian market have recently been submitted to careful analysis by the Department of Inland Revenue at Ottawa. Samples were purchased at Montreal, Toronto, and other points and submitted for analysis to Mr. A. McGill of the Inland Revenue department and the report is by the chief of the analytical department, Mr. Thomas Macfarlane. The results of the analyses show the presence of proof spirit, varying from a percentage of 1·51 to 38·87 and the opinion is given that the latter does not belong to the class of patent medicines but that it should be classified with liquors and be subject to importation duties and should not be allowed to be sold by druggists. In most of the samples of headache powders submitted for analysis acetanilide was present.

Montreal General Hospital.

During the year 1905 3237 in-door patients were treated in the Montreal General Hospital. This was an increase of 93 over the preceding twelve months. The consultations in the out-door departments numbered 44,504, an increase of 5015 over the preceding year. Of the 3237 in-door patients 201 remained over from the previous year, 3216 were admitted, and 190 remained in the hospital at the end of the year. The percentage of mortality was 7·81 or 4·54 exclusive of deaths occurring within three days of admission. The average cost per patient per day was $1.35. The Charles Alexander Memorial Fund in connexion with this institution has now reached the sum of $200,000 and about $50,000 are yet required to complete it. This will commemorate the deep interest always taken in this institution by the late Mr. Alexander. Dr. George H. Mathewson has been appointed ophthalmic surgeon to the hospital to succeed Dr. Stirling who, as mentioned above, has been appointed to the Royal Victoria Hospital.

The Health of Ontario during January.

The deaths from all causes in the province during the month of January numbered 2477, occurring in a population of 2,000,000 people. Of small-pox there were 141 cases with no deaths; scarlet fever, 137 cases with 4 deaths; diphtheria, 176 cases with 21 deaths; measles, 31 cases with 4 deaths; whooping-cough, 76 cases with 10 deaths; typhoid fever, 168 cases with 51 deaths; and consumption, 165 cases. As regards typhoid fever, 106 of the cases occurred at Fort William with 13 deaths, while the adjacent town of Port Arthur had 34 cases with 5 deaths.

Winnipeg New Medical College.

On the evening of Jan. 26th the fine new medical college recently erected at Winnipeg, Manitoba, was formally opened and work began in the new institution the following morning. It is about 23 years since the Manitoba Medical College was first established. It has grown in that time from a student-body of half a dozen and a faculty of two or three to a body of 150 and a faculty of 30 members. In the 23 years of its existence it has turned out more than 300 men. The cost of the new building, site, and equipment, as well as current expenses, have been defrayed by the fees received from students. The Manitoba Medical College stands well amongst similar institutions in Canada and earnestly advocates a five-year medical course in all Canadian medical institutions.

March 5th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Recent Census for Bombay City.

THE recent census of the city of Bombay carried out by the municipal authorities shows an increase of the population in all the wards with a total increase of 206,355 over the recorded population in 1901. It is estimated that the city now contains over 982,000 people. This includes the whole island of Bombay. The previous census showed an actual decline of 6 per cent. on the estimated population in 1891. The result of this quinquennial census seems to be particularly pleasing to the citizens of Bombay who attempt to place their city as the second in the empire. This contention, however, is absurd and Calcutta still remains the largest and most populous city excepting London. The results, however, are satisfactory in that they show the continued prosperity and growth of the western city. The chief importance to the city of this enumeration rests in the corrected estimates of mortality, recent rates having pointed to very serious errors.

The Plague Epidemic.

A report is current that plague has broken out among the British troops which have recently arrived in Calcutta from Mauritius. No official declaration has been made and the cases from their mildness are said to be defined as "climatic bubo." Some half-dozen cases were left in Bombay when the troops transhipped, but others have occurred on the voyage to Calcutta and since landing. It is rumoured, also, that two of the native crew have been attacked with the ordinary form of plague. The results of bacteriological investigation will be awaited with interest, as it will be remembered that the regiment which went to Calcutta from Hong-Kong in 1896 also suffered from this mild form of the disease. The plague statistics for the whole of India show that the annual recrudescence has fairly commenced. For the week ending Feb. 17th there was a total of 8926 seizures with 7362 deaths—an increase in the number of deaths of 1472. The provincial returns are as follows: Bengal, 2300 deaths; Bombay, 840; United Provinces, 855; Central Provinces, 822; Burma, 224; Hyderabad State, 84; Mysore, 80; Kashmir, 46; Madras Province, 35; and Rajputana, 6. Inoculation continues to be little practised. For the whole of January only 1342 inoculations were performed in Bombay and I hear that in Calcutta there were hardly any at all, notwithstanding that the sum of 8 annas is offered to all persons who will take advantage of this protection.

Small-pox in Rangoon and Calcutta.

Small-pox is raging in Rangoon as well as in Calcutta. In Rangoon about 1250 cases have occurred since Jan. 1st. The municipality considers that vaccination is not efficiently organised and has petitioned the Government regarding the Vaccination Act, the unsatisfactory work of the Vaccination Department, and the recent orders of the inspector-general

of civil hospitals. In Calcutta there have also been difficulties with regard to vaccination but the number of cases is not published although it is probable that a thousand cases at least have occurred each week for a month past. The difference of age at which vaccination in infants is enforced in England and India results in a considerable number of children escaping vaccination altogether. The sentiment of the people in India leads them to take advantage of the full year of age allowed.

March 2nd.

Obituary.

CHARLES EDWARD STEELE-PERKINS, M.B. LOND., M.R.C.S. ENG., L.S.A.

Dr. C. E. Steele Perkins died at his residence in Pennsylvania-road, Exeter, on March 7th, in his fifty-ninth year. He belonged to an old Devonshire family and was the third son of the late Dr. Samuel Steele-Perkins of Exeter, who at one time was sheriff of that city. He entered as a student at Guy's Hospital in 1863 and obtained the qualifications of M.R.C.S. Eng., L.S.A. in 1870. In 1872 he graduated as M.B. with honours at the University of London. He was in busy practice at Sydenham, at first in partnership with Dr. Arthur Turner, for close on 30 years and was much respected by a large circle of patients and friends. He was consulting physician to the South London Dispensary for Women and Children and to the Home and Infirmary for Sick Children, Sydenham; he was also medical officer to the Sydenham Dispensary. The death of his only child six years ago, followed by a severe attack of influenza, completely broke down his health so that he was obliged to retire from practice and lived with his father in Exeter until the death of the latter at the age of 87 years on March 7th, 1905. Dr. Charles Steele-Perkins was one of a numerous family of medical men well known in the West of England, and in Exeter there has been a continuity of the family practice for nearly 80 years. His father, uncle, three brothers, three nephews, and a cousin were, or are, members of the medical profession and were all educated at Guy's Hospital. In his younger days at Guy's Hospital he was well known as a good athlete, both on the cinder track and on the water, and he occupied a place in the hospital boat. Mrs. Steele-Perkins, who survives him, is a daughter of the late Mr. Edward Chapman of Wynnestey, Croydon, and Sydney, New South Wales.

Medical News.

UNIVERSITY OF OXFORD.—In a Congregation held on March 15th the following degrees were conferred:—

D.M.—F. P. Nunneley, Brasenose College.
M.B., B.Ch.—C. J. Singer, Magdalen College; and W. D. Sturrock, Magdalen College.
D.Sc.—W. Garstang, Lincoln College; and D. Randall-MacIver, Fellow of Worcester College.

The degree days for next term are the following: Thursday, April 26th; Thursday, May 17th; Thursday, June 14th; Thursday, June 21st; and Saturday, July 7th.

UNIVERSITY OF CAMBRIDGE.—Mr. G. H. F. Nuttall, M.A., F.R.S., university lecturer in bacteriology and preventive medicine, has been approved for the degree of Doctor of Science.—The General Board of Studies proposes that Dr. Nuttall should be appointed Reader in Hygiene with a stipend of £250 a year, of which £150 are to be provided by the State Medicine Syndicate.—At a congregation on March 15th the following degrees were conferred:—

M.B.—R. E. French, King's.
M.B. and B.C.—C. N. le Brocq, Pembroke; T. W. N. Dunn, Caius; H. E. Graham, Jesus; and T. L. Drapes, Sidney Sussex.

FOREIGN UNIVERSITY INTELLIGENCE.—*Amsterdam:* Dr. L. J. J. Muskens has been recognised as *privat-docent* of Nervous Diseases.—*Berlin:* Dr. Heinrich Finkelstein, *privat docent* of Children's Diseases, has been appointed Professor.—*Breslau:* Dr. A. Neisser has been promoted to the newly-established chair of Dermatology and Dr. A. Czerny to that of Children's Diseases. Dr. Georg Boenninghaus has been recognised as *privat-docent* of Laryngology and Otology.—*Copenhagen:* Dr. C. Rasch has been appointed to the charge of the Dermatological Department, with the lectureship connected with it, in succession to Professor A. Haslund, who has resigned.—*Cracow:* Dr. Franz Julius Nowotny has been recognised as *privat docent* of Laryngology; Dr. Adam Bochenek has been promoted to an Extraordinary Professorship of Anatomy; and Dr. Emil Godlewski to an Extraordinary Professorship of Embryology.—*Florence:* Dr. Dante Pacchioni has been recognised as *privat-docent* of Children's Diseases.—*Freiburg:* Professor Schmorl of Dresden has declined the offer of the late Professor Ziegler's chair.—*Giessen:* Dr. E. Leutert, Extraordinary Professor of Otology, has been promoted to an Ordinary Professorship.—*Gratz:* Dr. Fritz Netotitzky has been recognised as *privat-docent* of Pharmacognosis.—*Heidelberg:* Dr. Ludwig Arnsperger, assistant in the surgical clinic, and Dr. Karl Willmanns, assistant in the clinic of Mental Diseases, have been recognised as *privat docenten*.—*Jena:* Dr. Strohmayer has been recognised as *privat-docent* of Nervous Diseases and Dr. Frey as *privat-docent* of Pharmacology.—*Königsberg:* Dr. P. Gerber has been promoted to an Extraordinary Professorship of Laryngology.—*Leipsic:* Dr. Quensel has been recognised as *privat-docent* of Psychiatry and Nervous Diseases.—*Strasburg:* Professor von Recklinghausen is about to retire.

DONATIONS AND BEQUESTS.—At the meeting of the Lostwithiel (Cornwall) town council, held on March 6th, a hearty vote of thanks was awarded Dr. N. Coulston of America, who had recently given £100 to be spent in some way for the benefit of the town. The council determined to use the gift towards improving some portion of the moor and converting it into a recreation ground.—By the will of Mrs. Mary Durham of Ellerdale-road, Hampstead, widow of Mr. Arthur E. Durham, F.R.C.S., late consulting surgeon to Guy's Hospital, the testatrix bequeathed to the president and governors of Guy's Hospital the sum of £1000 Natal Government 3½ per cent. inscribed stock, together with the current dividend, free from duty, such sum to be used by them as a fund for the endowment of a studentship to be called "The Arthur Durham Travelling Studentship," open to all students of the medical school of the said hospital who have been duly registered as qualified medical practitioners other than a physician, surgeon, assistant physician, or assistant surgeon on the staff of the said hospital, but such studentship is not to be held simultaneously with the Gull research studentship, the Gordon lectureship, or any appointment that gives the holder assistance in travelling.

THE IRISH MEDICAL SCHOOLS AND GRADUATES' ASSOCIATION.—This society celebrated St. Patrick's Day, March 17th, by holding the annual festival dinner at the Hotel Cecil, London, on that date. Covers were laid for over 250 guests and under the genial chairmanship of the President of the association, Dr. E. Irwin Scott, the proceedings were marked with much enthusiasm. The presence of ladies and an excellent musical programme contributed to the gaiety of the meeting and the speeches, songs, and various entertainments kept the company together to a late hour. Mr. George Stoker proposed the toast of "Our Defenders," and this was responded to for the navy by Inspector-General W. H. Lloyd, of the Royal Navy Medical Service, and by Lieutenant-General Sir John French speaking for the army. Dr. H. Macnaughton-Jones submitted the toast of "The Guests," to which Sir John French replied, referring in felicitous terms to the cordial relations that existed between the Irish medical schools and the army. He recounted how the Irish medical schools had furnished the army with many eminent military medical officers to whom soldiers were much indebted. During 30 years' service he had been closely associated with military medical officers and he knew their worth. What he admired most in these men was the marvellous manner in which, like Mark Tapley, they met every difficulty with good humour and patience. In time of war, after marching and fighting, the soldier was given a certain amount of rest, but those hours of rest for the soldier were spent by the military medical officers in active execution of their duties and he was not surprised at the health of these men breaking down now and again. After referring to the list of honours conferred on military officers recently published in THE LANCET, he concluded by mentioning in detail the graduates of the Irish medical schools who had risen to great honour in their profession, and especially

commented on the work of those who went out to the South African war and achieved such great successes. Mr. A. W. Mayo Robson and Mr. W. Arbuthnot Lane having also responded, Mr. R. G. Webster proposed the toast of "Ourselves," which was acknowledged by the chairman.

SUPERANNUATION GRANT.—The Bideford (Devon) board of guardians has granted a superannuation allowance of £46 per annum to Mr. H. Miller, formerly medical officer of the Hartland district.

MEDICAL MAGISTRATE.—Mr. W. B. Taylor, M.R.C.S. Eng., L.S.A., has been placed on the Commission of the Peace for the county of London.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Defeat of the Pure Beer Bill.

THE defeat of the Pure Beer Bill on its second reading in the House of Commons on Friday, March 16th, was not unexpected. A statement by Mr. MCKENNA, the Secretary to the Treasury, proved sufficient to kill it. In 1902 a similar Bill was introduced. It proposed that its clauses should be enforced by the Inland Revenue officials, but Sir MICHAEL HICKS-BEACH, then Chancellor of the Exchequer, showed that it was absolutely impossible for those officers to undertake the duty. The promoters of this session's Bill got over that difficulty by leaving out all the proposals which would have provided for carrying it out, "with the result," said Mr. MCKENNA, "that unless the Bill enforced itself it would not be enforced at all." From a medical point of view the discussion contained little of interest.

HOUSE OF LORDS.

TUESDAY, MARCH 20TH.

Poisons and Pharmacy Bill.

The Earl of CREWE moved the second reading of the Poisons and Pharmacy Bill. He said he was glad to be able to state that in its main points the measure was not of a controversial character. Had the late Government remained in office he believed that the Marquis of Londonderry would in all probability have introduced a similar, if not precisely the same, Bill. As it was the outcome of considerable discussion outside he thought it right to explain the details. The first clause of the Bill dealt with the schedule of poisons. At present the sale of poisons was governed by the Pharmacy Act of 1868 and its schedule, but as times had advanced and experience had been gained additions required to be made to the schedule. These and one or two other proposed additions were incorporated in the Bill. Clause 2 dealt with the sale of poisonous substances for agricultural and horticultural purposes. For some time past there had been a strong demand on the part of agriculturists and horticulturists for some extension in the sale of poisonous substances used in their businesses. It was now proposed that a local authority should have power to give licences to traders who were not chemists to sell those important agricultural articles. It was not, however, intended in any way to supersede the ordinary business of the chemist. It was only in districts where there were no chemists' shops that, as a rule, the power would be given. The most important article to which this provision related was sheep-dip which was of a very poisonous nature. The most popular and generally used sheep-dip contained a very large amount of arsenic and a large sheep farmer would probably use several hundredweights of arsenic in the course of a year. It had been found, especially in remote districts of Scotland, that sheep farmers had sustained no small inconvenience by having to send to a great distance to secure the raw material of sheep dips and it was hoped that by giving licences to qualified tradesmen who were not chemists to sell this the convenience of sheep farmers would be added to. There was also a trade in various poisons for the destruction of fungus enemies of crops and plants. He believed that some objection had been raised to including arsenic in the substances that could be so sold. But arsenic possessed the dignity of having an Act of Parliament all to itself by which its sale was regulated. It had to be sold in a particular way so that it could be distinguished from other substances. The draft regulations which it was proposed to make by Order in Council under this clause were already prepared and he proposed to lay them on the table at an early date. The third clause dealt with a matter which was of interest to the Pharmaceutical Society and was one which would protect the public. Its effect was that any person who carried on the business of a chemist in more than one shop, which he did not look after himself, he being, of course, a registered chemist, must appoint in each case a registered chemist to look after the business. It was obvious to everybody that the dispensing of drugs and the general management of the business of a chemist should be conducted by a thoroughly qualified person. Clause 4 dealt with a question which had given rise to a considerable amount of controversy. Chemists' shops were very largely carried on by companies. A demand at one time was made, which it was quite impossible to meet, that everybody having an interest in such a company should of necessity be a qualified chemist. It was of no interest to the public to know how a chemist's shop was financed but it was of the greatest possible interest to know how it was managed. This clause required that where chemists' shops were carried on by a company there must be *bonâ-fide* management by a qualified person whose name should be conspicuously placed in the shop. In order to prevent any infringement of this provision further words proposed to enact that any breach of the regulation should be visited not only on the unqualified person who managed the shop but on the company itself. The Government did not want to interfere in any way with the carrying on of those shops. He believed that they did supply a want. It was said that if those companies were interfered with the poor would not be able to obtain a cheap supply of drugs. How far cheap drugs were a benefit to the poor or anybody else might be a matter of opinion. He did not know that access to the very cheap drugs might be an unmixed blessing to the poor, but if they wanted them it was perfectly right that they should be able to have them and it was not intended to interfere with the provision of those shops. Clause 5 gave certain powers to the Pharmaceutical Society to carry out examination and contained a useful provision enabling the Society to recognise colonial diplomas without further examination in this country. The sixth clause made certain changes in regard to the sale of the more important and best-known mineral acids which were very largely used in many branches of commerce. Precautions were to be taken of a well-known kind, relating to the marking and labeling of the bottle or vessel in which the poisons were contained. The last clause applied the Act to Ireland, but he thought it would be more convenient to discuss this proposal at a later stage.

The Earl of DONOUGHMORE said he had no reason to object to the introduction of this measure, but at a later stage he would ask their lordships to discuss the proposal to extend the Act to Ireland. They had already a system in Ireland which he believed carried out the objects which prompted the Government to bring in the present Bill. They in Ireland did not therefore think the Bill necessary. He was speaking after consultation with the Pharmaceutical Society of Ireland and in committee he would move that the Bill do not apply to Ireland. He was authorised to say on behalf of the Pharmaceutical Society, which was not called to give evidence before the Departmental Committee, that it would be very glad to state its point of view to the Government.

Lord MONKSWELL wished to say that the Pharmaceutical Society of Great Britain welcomed many of the provisions of the Bill and regarded it as a good Bill. A Bill promoted by the Society had been presented in the other House and to some extent it was on all fours with this one, but the Society desired that amendments should be made on Clause 4 making it a little more stringent. He ventured to hope on behalf of the Society that the Government would consult the President before the Bill went to committee.

The Marquis of LONDONDERRY agreed with the Earl of CREWE that this Bill was non-controversial. They were all anxious that poisonous drugs should be sold with the maximum of convenience and with the minimum of danger and risk. He hoped that, as Lord Donoughmore had suggested, the various bodies interested would be consulted before the Bill went to committee. There was a feeling in Ireland that that country should not be included. Ireland was treated by the Bill of 1890, which was considered to have been of enormous advantage. Otherwise he believed the Bill would be for the general good.

The Earl of HALSBURY thought the whole question was more difficult and complex than appeared on the face of this Bill. It was perfectly certain that a very large number of poisons could be sold. These sometimes could not be got in a chemist's shop. If they went to a dry salter's shop they would get any amount of poisons and no precaution whatever existed. The law had left this matter absolutely without protection, because the articles were not sold in the character of medicines but under common and popular names. It was a question which would have to be dealt with at more length and with more precision than was done in the Bill now before them. He, however, did not wish to defeat the objects of the Bill and he would certainly support it.

The Earl of CREWE, in reply to the discussion, said he would be very happy to consult with the Pharmaceutical Society of Ireland and to give due weight to any representations it might make. He could also assure Lord Monkswell that he would have pleasure in talking over the provisions of the Bill with representatives of the Pharmaceutical Society of Great Britain and other gentlemen who wished to see him on the subject. With reference to what fell from the Earl of Halsbury, he was personally in general agreement with him in the belief that all measures of this kind were of a partial character as regards the possible danger to the public in the sale of deleterious articles. That was a very large question indeed and hardly came under the head of a Poisons and Pharmacy Bill in the technical sense. Although it was well worthy of consideration whether a larger measure might be brought in it was hardly possible to attempt to include further provisions in the present Bill.

The motion was agreed to and the Bill was read a second time.

HOUSE OF COMMONS.

THURSDAY, MARCH 15TH.

The Medical Profession and the Poor-law Commission.

Mr. JEREMIAH MACVEAGH asked the First Lord of the Treasury whether it was intended to give effect to the recommendation of the Leinster branch of the British Medical Association that the Poor-law Commission should include a representative of the medical profession in Ireland.—Sir H. CAMPBELL-BANNERMAN replied: The answer is in the negative.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

Traité d'Hygiène. Publié en Fascicules sous la Direction de MM. P. Brouardel et E. Mosny. II. Le Sol et l'Eau. Par L. De Launay, Professeur à l'École des Mines, E. A. Martel, Auditeur au Comité Consultatif d'Hygiène de France, Ed. Bonjean, Chef du Laboratoire du Comité Consultatif d'Hygiène de France, et J. Ogier, Chef du Laboratoire de Toxicologie de la Faculté de Médecine de Paris. Price Fr.10.

LAURIE, T. WERNER, Clifford's Inn, Fleet-street, E.C.

The Mummy and Miss Nitocris. A Phantasy of the Fourth Dimension. By George Griffith, author of "The Angel of the Revolution," "A Honeymoon in Space," &c. Price 6s.

MACMILLAN AND CO., LIMITED, London.

Surgical Aspects of Digestive Disorders. By James G. Mumford, M.D., Visiting Surgeon to the Massachusetts General Hospital and Instructor in Surgery in the Harvard Medical School, in association with Arthur K. Stone, M.D., Physician to Outpatients, Massachusetts General Hospital and Assistant in the Theory and Practice of Physic in the Harvard Medical School. Price 10s. 6d. net.

Minor and Operative Surgery, including Bandaging. By Henry R. Wharton, M.D., Professor of Clinical Surgery in the Woman's Medical College of Pennsylvania, Surgeon to the Presbyterian Hospital and the Children's Hospital. Price 14s. net.

Methods of Organic Analysis. By Henry C. Sherman, Ph.D., Adjunct Professor of Analytical Chemistry in Columbia University. Price 7s. 6d. net.

MARLBOROUGH, E., AND CO., 51, Old Bailey, E.C.

Italian Self-taught, with Phonetic Pronunciation. By C. A. Thimm, F.R.G.S. Third edition, revised and enlarged by G. Dalla Vecchia. Price, wrapper, 1s.; cloth 1s. 6d.

Turkish Self-taught, with English Phonetic Pronunciation. By Captain C. A. Thimm. Revised by Professor G. Hagopian, Member of the Royal Asiatic Society. Fourth edition. Price, wrapper, 2s.; cloth 2s. 6d.

NEW SYDENHAM SOCIETY, London. (Agent: H. K. LEWIS, 136, Gower-street, W.C.)

An Atlas of Illustrations of Clinical Medicine Surgery, and Pathology. Compiled for the New Sydenham Society (a continuation of the "Atlas of Pathology"). Chiefly from Original Sources. Fasciculus XXIV., ter (Double Number), being XVIII. and XIX. of the Clinical Atlas. Elephantiasis in English Practice, Symmetrical Lupus Vulgaris, the Potato-like Tumour of Neck, Schistosoma Cattoi, and other Subjects. Price, to non-subscribers, one guinea.

POTTER AND CLARKE, 60, 62, & 64, Artillery-lane, E.

Potter's Cyclopædia of Botanical Drugs and Preparations. By R. C. Wren. Price not stated.

RAMSAY, WILLIAM, 80, Swanston-street, Melbourne, Victoria, Australia.

A Text-book on Plague. By Dr. Tohiu Ishigami, Superintendent, Bacteriological Institute, Osaka, Japan; formerly Assistant Bacteriologist to Professor Kitasato. Revised by Professor Shibasaburo Kitasato, Tokyo, Japan. Translated, enlarged, and illustrated with Pathogenic Horticulture by Donald MacDonald, M.B., C.M. Glasg., late Consulting Bacteriologist to the South Australian Government, Medical Officer-in-Charge of Infectious and Isolation Wards, Bacteriologist, Medical Superintendent (A.), Honorary Pathologist (A.), Resident Medical Officer, Adelaide Government Hospital, South Australia, &c. With 152 illustrations and three chromo-lithographic plates. Copyright by D. MacDonald, M.B., C.M. In two parts. (Together 180 pages.) Price £1 1s.

REBMAN, LIMITED, 129, Shaftesbury-avenue, W.C.

The Influence of the Menstrual Function on Certain Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D., Physician to the New York Skin and Cancer Hospital, Consulting Physician to the New York Hospital, Consulting Dermatologist to the Randall's Island Hospitals, to the Manhattan Eye and Ear Hospital, and to the Hospital for Ruptured and Crippled, &c. Price 5s. net.

SCIENTIFIC PRESS, LIMITED, 28 & 29, Southampton-street, Strand, W.C.

Burdett's Hospitals and Charities, 1906. By Sir Henry Burdett, K.C.B. Price 6s. net.

SPOTTISWOODE AND CO., LIMITED, 54, Gracechurch-street, E.C.

The Medical Register. Printed and published under the direction of the General Council of Medical Education and Registration of the United Kingdom, pursuant to an Act passed in the Year XXI. & XXII. Victoriæ, Cap. XC., entitled An Act to Regulate the Qualifications of Practitioners in Medicine and Surgery. 1906. Price 10s. 6d. Copies for previous years, price 2s.

VIGOT FRÈRES, 23, Place de l'Ecole-de-Médecine, Paris.

Technique de Stérilisation à l'Usage des Pharmaciens. Par le Dr. E. Gérard, Professeur de Pharmacie et Pharmacologie à la Faculté de Médecine et de Pharmacie de Lille. Price Fr.5.

Manuel Pratique pour le Choix des Verres de Lunettes et l'Examen de la Vision. Par le Docteur Serini, Ancien Chef de Clinique Ophthalmologique à la Faculté de Paris, Lauréat de l'Académie de Médecine, Membre de la Société de Thérapeutique, et le Docteur Fortin, Médecin-Oculiste. Price Fr.4.

WILEY, JOHN, AND SONS, New York. (CHAPMAN AND HALL, LIMITED, London.)

The Microscopy of Vegetable Foods, with Special Reference to the Detection of Adulteration and the Diagnosis of Mixtures. By Andrew L. Winton, Ph.D., in Charge of the Analytical Laboratory of the Connecticut Agricultural Experimental Station, Instructor in Proximate Organic Analysis in the Sheffield Scientific School of Yale University, with the Collaboration of Dr. Josef Moeller, Professor of Pharmacology and Head of the Pharmacological Institute of the University of Graz. First edition. First thousand. Price 31s. 6d. net.

Personal Hygiene. Designed for Undergraduates. By Alfred A. Woodhull, A.M., M.D., LL.D. (Prince), Brigadier-General U.S. Army, retired, lately Colonel, Medical Department, U.S. Army. First edition. First thousand. Price 4s. 6d. net.

WRIGHT, JOHN, AND CO., Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.)

"First Aid" to the Injured and Sick: an Advanced Ambulance Handbook. By F. J. Warwick, B.A., M.B. Cantab., M.R.C.S., L.S.A., Associate of King's College, London, and late Captain, Royal Army Medical Corps (Vols.), London Companies; and A. C. Tunstall, M.D., F.R.C.S. Edin., Captain commanding the Fourth or City of London Volunteer Infantry Brigade Bearer Company. Fourth edition. Twentieth thousand. Price, paper, 1s.; cloth, 2s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ATTLEE, C. K., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Surgeon to the Evelina Hospital for Sick Children.

BERRY, FREDERICK CHARLES, M.D., B.Ch. Dub., has been appointed Medical Officer of Health of Burnham (Somerset).

BERRY, JOSEPH FOREMAN, L.R.C.P. & S. Edin., has been appointed House Surgeon at the Radcliffe Hospital and Chorley Dispensary.

BULLEID, ARTHUR, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health of Midsomer Norton (Somerset).

BURLAND, CHARLES, M.D. Brux., has been appointed Medical Officer to the Board of Trade at the Port of Glasgow.

CANN, FRANCIS JOHN HUGHTREDE, M.B. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Admiralty Surgeon and Agent at Dawlish (Devon).

CARDEW, H. J., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at the Royal South Hants and Southampton Hospital.

CARY, ARTHUR JAMES, L.R.C.P., L.R.C.S., L.M. Irel., has been appointed Medical Officer for the Bicadon District by the Axbridge Board of Guardians.

DEAKIN, FRANK N., M.R.C.S., L.R.C.P. Lond., has been appointed Surgeon to In-patients at the Walsall and District Hospital.

GRENE, J. W., L.R.C.S. Irel., L.K.Q.C.P. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Athboy District of the county of Meath.

HARNETT, W. G., M.B., B.Ch., B.A.O. Dub., has been appointed Senior House Surgeon at the Royal South Hants and Southampton Hospital.

HOSFORD ALFRED STROUD, M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to the Royal Hospital for Diseases of the Chest, London, E.C.

HUTT, C. W., M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Surgeon at the Royal South Hants and Southampton Hospital.

KEALY, JOHN WILLIAM GREGORY, L.R.C.P. Lond., M.R.C.S., L.S.A., D.P.H. Lond., has been appointed Surgeon and Admiralty Agent at Priddy's Hard, Portsmouth.

KLUMPP, E. G., M.B., B.S. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Wootton Bassett District of the county of Wilts.

LEGGATT, GERARD S., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant at St. John's Hospital for Diseases of the Skin, Leicester-square.

OLDFIELD, CARLTON, M.D., B.S. Lond., has been appointed Honorary Assistant Surgeon to the Hospital for Women and Children, Leeds.

PIGGOTT, FREDERICK CECIL HOLMAN, M.D. Cantab., M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health of Teignmouth (Devon).

PINEO, ERNEST GEORGE DOUGLAS, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Churchill District by the Axbridge Board of Guardians.

POPE, HENRY SHARLAND, M.B., B.C. Cantab., has been appointed Medical Officer of Health of Bridgwater; and also Certifying Surgeon under the Factory and Workshop Act for the Bridgwater District of the county of Somerset.

WADE, REGINALD, M.R.C.S., L.S.A., has been re-appointed Medical Officer for the Mark District by the Axbridge Board of Guardians.

WELLINGTON, R. HENSLOWE, M.R.C.S., L.R.C.P. Lond., barrister-at-law, has been appointed Lecturer on Medical Jurisprudence to the Westminster Hospital School of Medicine.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN, CITY (FEVER) HOSPITAL.—Resident Physician. Salary £100, with board and rooms.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 with fees.

BOURNEMOUTH, ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

BRIDGWATER HOSPITAL.—House Surgeon. Salary £80 a year, with board and residence.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £80, with board and residence.

BRISTOL GENERAL HOSPITAL.—Assistant House Physician. Salary £60, with board, residence, &c.

BURY INFIRMARY.—Junior House Surgeon. Salary £80, increasing to £90, with board, residence, and attendance.

CHARING CROSS HOSPITAL.—Resident Medical Officer. Salary £100 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Two House Physicians for six months. Salary at rate of £30 per annum, with board, residence, and washing.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £40 per annum, with residence, board, and washing.

DURHAM COUNTY HOSPITAL.—House Surgeon. Salary £120, with board and lodging.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer for the Casualty Department for six months, renewable. Salary at rate of £100 per annum.

EGYPTIAN GOVERNMENT, KASR-EL-AINY HOSPITAL.—Resident Surgical Officer. Pay £250 a year, with quarters, servants, washing, coal, and light.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Eight Qualified Clinical Assistants.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's buildings, Holborn, E.C.—Honorary Dental Surgeon.

GERMAN HOSPITAL, Dalston, N.E.—Honorary Anæsthetist.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25.

HUDDERSFIELD INFIRMARY.—Senior House Surgeon. Salary £80 per annum, with board, residence, and washing.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100, with board and lodging.

LEICESTER HUMBERSTONE ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £160 per annum, with quarters and board.

LEITH HOSPITAL.—Surgeon. Salary £80, with board.

LINCOLN COUNTY HOSPITAL.—Junior House Surgeon, unmarried, for six months. Honorarium of £25, with board, residence, and washing.

LONDON COUNTY ASYLUM, Banstead, Surrey.—Junior Assistant Medical Officer. Salary £ 50 per annum, with board, apartments, and washing.

LONDON LOCK HOSPITAL, Dean-street, W.—Anæsthetist.

MANCHESTER NORTHERN HOSPITAL, Park-place, Cheetham Hill-road.—House Surgeon. Salary £80 per annum, with apartments and board.

MARGARET STREET HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Surgeon.

NATIONAL HOSPITAL FOR THE RELIEF AND CURE OF THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Assistant Surgeon.

NEW HOSPITAL FOR WOMEN, Euston-road.—Clinical Assistant (female).

NOTTINGHAM, CHILDREN'S HOSPITAL.—House Surgeon, unmarried, for six months. Board, residence, and washing provided.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

PERTHSHIRE, DUNBLANE HYDROPATHIC.—Physician.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary at rate of £50 per annum, with board, residence, and laundry.

PUBLIC DISPENSARY, Drury-lane, W.C.—Physician.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Pathologist and Registrar. Salary at rate of £80 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Clinical Assistants.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Anæsthetist. Honorarium £20 per annum. Also Clinical Assistants.

SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—DREADNOUGHT HOSPITAL:—Two House Physicians and Two House Surgeons. Salaries £50 per annum, with board, residence, and washing. BRANCH HOSPITAL, Royal Albert Dock, E.:—Senior House Surgeon. Salary £75 per annum, and an additional £25 per annum for acting as Registrar, &c., with board, residence, and washing. Also House Surgeon. Salary £50 per annum, with board, residence, and washing.

SWANSEA GENERAL AND EYE HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with board, apartments, and attendance.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

VALKENBERG ASYLUM, near Cape Town.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, washing, and lodging.

WAKEFIELD, CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Junior House Surgeon, unmarried. Salary £80 per annum, with board, lodgings, and washing.

WREXHAM RURAL DISTRICT COUNCIL, Denbigh.—Medical Officer of Health and Superintendent of the Joint Fever Hospital. Salary £400 per annum.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Dawley and at Worthen, in the county of Salop; and at Crettyard, in the county of Carlow.

Births, Marriages, and Deaths.

BIRTHS.

HICKS.—On March 18th, at Park House, East Finchley, the wife of Thomas W. Hicks, M.D. Lond., of a son.

STORRS.—On March 18th, at Hall Gate, Tunbridge Wells, the wife of William Townsend Storrs, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGE.

MATTHEWS—BELL.—On March 14th, at St. Peter's, Stockton-on-Tees, Craufurd Tait Matthews, M.B., Ch.B., to Dora, youngest daughter of J. Hyslop Bell, Esq., J.P.

DEATHS.

HEDGES.—On the 13th inst., at Rutland House, Leighton Buzzard, John Alexander Hedges, M.R.C.S. Eng., L.R.C.P. Lond., aged 65 years.

PERKIN.—On March 16th, at Bulawayo, South Africa, Robert Frederick Thornton Perkin, M.R.C.S., L.R.C.P. and L.M., aged 45 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE TITLE OF DOCTOR.

To the Editors of THE LANCET.

SIRS,—May I, as another "ordinary practitioner," be allowed to endorse what your correspondent, "Fiat Justitia," says in respect to the title of doctor? The fact that a medical man is entitled to put "Dr." on his doorplate has—rightly or wrongly—considerable weight with the general public and it seems to me unfair that one section of the profession should be allowed to do so whilst another is not, although neither are legally entitled to do so. Either, as your correspondent suggests, give the title only to M.D.'s, who are the only persons legally entitled to it, or else give it to all persons qualified to practise medicine, surgery, and midwifery.

I am, Sirs, yours faithfully,

March 2nd, 1906. M.R.C.S.

SNAILS AS FOOD.

To the Editors of THE LANCET.

SIRS,—Seeing approval was expressed of the snail as an article of diet in THE LANCET of March 17th, p. 777, may I bring to your notice a very simple "cure" adopted by French people for consumption? The edible snails are collected and put into a large glass jar and thickly strewn with moist sugar and a large pinch of salt is added. In a few days the juice thus extracted from the snails is boiled down and made into a beautiful clear jelly, flavoured according to taste. If there be any virtue in the above it seems a very simple addition to the diet of the consumptive and at least there could be no harm in it.

I am, Sirs, yours faithfully,

Twickenham, S.W., March 16th, 1906. HENRIETTA F. WILLIAMSON.

APPENDICITIS AND ENAMELLED FOOD UTENSILS.

To the Editors of THE LANCET.

SIRS,—We read with much interest the remarks contained in THE LANCET of March 10th, p. 723, respecting an imaginary risk of appendicitis being incurred by the use of enamelled steel ware.

In view of the increased employment by hospitals and institutions of all kinds of dishes, sterilisers, pails, measures, &c., made of enamelled ware of superior quality your readers may be interested to hear that such reports, which, if true, would certainly be detrimental to the sale of enamelled cooking utensils, have for many years formed the subject of very searching investigation on the continent where enamelled ware is of far more general use than is the case in England.

Wherever these investigations have been made the evidence has been entirely against chips of enamel ever being the cause of appendicitis; of a large number of medical opinions which we have in our possession one by the eminent specialist, Professor Riedel of Jena, is of particular interest as it states that not in a single case out of 1100 in which he has operated did he trace a chip of enamel in the appendix. We have a large amount of literature on this subject in our possession but are afraid that they are too lengthy for us to place them before you at present but if you desire it we shall be happy to allow you or any of your readers to inspect same.

We are, Sirs, yours faithfully,

March 16th, 1906. OSCAR MOENICH AND CO.

PRESCRIBING DRUGGISTS.

To the Editors of THE LANCET.

SIRS,—The prescribing druggist is evidently not a modern production. Pope in his essay on "Criticism," written in 1709, says:—

> "So modern 'pothecaries, taught the art,
> By doctor's bills [prescriptions], to play the doctor's part,
> Bold in the practice of mistaken rules,
> Prescribe, apply, and call their masters fools."

I am, Sirs, yours faithfully,

March 18th, 1906. FOLLOWER OF HIPPOCRATES.

SANITARY TOWELS.

Messrs. Hunter and Co. of Nottingham have sent us specimens of their "Hygies," hygienic sanitary towels, which possess the advantage of being both readily inflammable and easily washed. Made of a substance resembling stockinette they are soft, highly absorbent, and should be comfortable to wear. Their price is moderate and we think that they are worthy of a trial by those who wish for a sanitary towel which can either be quickly and readily destroyed or if necessary washed and used again.

TO TELEPHONE SUBSCRIBERS.

To the Editors of THE LANCET.

SIRS,—May I offer a word of warning to the above through your columns? The National Telephone Company is now putting in new instruments and its inspectors are canvassing the subscribers with respect to the same. These new instruments work very well indeed and are, in a way, much better than the old, but we are confronted with (to medical men especially) a very serious difficulty which is,

that if there is an extension instrument when the line is switched "through" the whole conversation from either end can be heard with equal distinctness on the main instrument as well as on the extension. As many of us have an extension instrument in our consulting-room for the sake of extra privacy, it seems to me to be a very wrong method which allows the whole of that privacy to be intruded upon (without the speaker's knowledge) by anyone who chooses to take the receiver off the main instrument. I have already objected several times and am now told that it cannot be altered and that it ought to have been fully explained to me by the canvasser that there would be no privacy of conversation on the extension. In these circumstances I would wish to warn all my professional brethren who may have, or wish to have, an extension instrument of the conditions that will exist unless they stand out against them, so that they may not be, as I am,

A VICTIM.

March 19th, 1906.

THE CARSWELL AND GILCHRIST FUND.

To the Editors of THE LANCET.

SIRS,—Two members of our profession in Glasgow, Mr. John Carswell and Dr. Marion Gilchrist, have recently been subjected to an unjustifiable and vexatious prosecution for granting the certificates necessary for placing a patient in an asylum. The patient was undoubtedly insane when admitted and required asylum care, but insanity was denied and alleged irregularities in the signing of the certificates were made the ground for an action at law and a demand for £10,000 damages from each of the certifying doctors. After a prolonged trial in the Court of Session, the verdict given was entirely in favour of the defendants, with expenses. The prosecutor is unfortunately quite unable to pay and the expenses must be defrayed by the defenders themselves. The result is that although declared blameless they are jointly mulcted in fully £900. Such a hardship demands not only sympathy but practical help. It will appeal to every member of the profession and we as a committee ask your kind assistance in raising a suitable fund. The treasurer is Dr. W. G. Dun, 15, Royal-crescent, Glasgow, and we enclose a list of the subscriptions already received. We are, Sirs, yours faithfully,

W. L. REID, M.D. Glasg.,
President of the Faculty of Physicians and Surgeons;
Chairman of the Committee.
J. CRAWFORD RENTON, M.D. Edin., Secretary.

Glasgow, March 19th, 1906.

	£	s.	d.
Dr. W. L. Reid	10	0	0
Professor Sir William Macewen	10	0	0
Dr. James Finlayson ...	10	0	0
Dr. T. S. Clouston	5	5	0
Dr. C. W. Macgillivray ...	5	5	0
Dr. L. R. Oswald	5	5	0
Dr. John Playfair	5	5	0
Dr. J. Crawford Renton	5	5	0
Dr. J. M'Gregor Robertson	5	5	0
Dr. Jas. Rutherford ...	5	5	0
Dr. D. Yellowlees	5	5	0
Dr. J. D. Maclaren	5	0	0
Dr. D. C. M'Vail	3	3	0
Dr. Joseph Bell	3	3	0
Professor Sir Halliday Croom	3	3	0
Professor Sir Thomas Fraser	3	3	0
Dr. Wm. Bruce	2	2	0
Dr. Neil Carmichael ...	2	2	0
Dr. J. Walker Downie ...	2	2	0
Dr. W. G. Dun	2	2	0
Dr. Eben. Duncan	2	2	0
Professor Samson Gemmell	2	2	0
Professor John Glaister	2	2	0
Professor D. J. Cunningham	2	2	0
Dr. Robert Jones	2	2	0
Dr. Geo. S. Middleton ...	2	2	0
Mr. H. F. Hayes Newington	2	2	0
Dr. J. Soutar M'Kendrick	2	2	0
Dr. Samuel Sloan	2	2	0
Professor Ralph Stockman	2	2	0
Dr. J. Lindsay Steven ...	2	2	0
Dr. John Rowan	2	2	0
Dr. H. Garnett Wilson ...	2	2	0
Dr. T. Outterson Wood ...	1	1	0
Dr. Alice M'Laren	1	1	0
Dr. Elizabeth M. Pace ...	1	1	0
Dr. George Halket	1	1	0
Dr. R. O. Adamson	1	1	0
Dr. John Barlow	1	1	0
Dr. J. Mearns Taylor ...	1	1	0
Dr. Ernest W. White ...	1	1	0

TETANUS ANTITOXIN AND TETANUS.

To the Editors of THE LANCET.

SIRS,—Tetanus antitoxin, in common with the other serums, may become accidentally contaminated with the living bacilli, apart from the serum-yielding host. The marked arthritis met with after use may simulate mild tetanic rigidity (Pinatelle and Rivière, No. 26, Gazette des Hôpitaux, 1904, and Annand, THE LANCET, April 2nd, 1904, p. 934). Considering the reason why the serum is used it is evident that suspicions and accusations must be few.

I am, Sirs, yours faithfully,

Leyton, E., March 17th, 1906. N. CAMPBELL, M.B., D.P.H.

ADIPOSIS DOLOROSA.

To the Editors of THE LANCET.

SIRS,—Your correspondent, "I.S.M.," will find an admirable account of adiposis dolorosa in the *Gazette des Hôpitaux*, 1903, pp. 957 and 1196. There is also a short account in Clifford Allbutt's "System," vol. vi., and a somewhat longer one in "Twentieth Century System," vol. ix., by Dercum. Leonard Williams showed a case of adiposis dolorosa in a male to the Clinical Society in 1903, and another is recorded by Chevors in the *British Medical Journal*, vol. i., 1904, p. 781. An instance of the disease in two sisters is reported by Hammond in the *British Medical Journal*, vol. ii., 1904, p. 121. Bevor's case is reported and illustrated in the Transactions of the Clinical Society, vol. xxxiii., p. 251, 1900. Hale White's case is very fully reported in the *British Medical Journal*, Dec. 2nd, 1899, and illustrated with some excellent reproductions of photographs.

These are all the references I can put my finger on but a fair number of other cases are scattered about in the journals.

I am, Sirs, yours faithfully,

J. M. FONTESCUE-BRICKDALE, M.A., M.D. Oxon.

Clifton, March 17th, 1906.

Mr. J. S. Chapman.—Our correspondent asks a question which we cannot answer upon the information given. His best course is to apply to the medical man, or men, who treated the patient prior to his leaving England.

R. F. S.—Our correspondent is advised to consult his usual medical attendant.

ERRATUM.—In the notes of a case of nephrectomy for tuberculous kidney and ureter, published in THE LANCET of Feb. 3rd, p. 300, in the report of the Cork Medical and Surgical Society, it was stated that the clamp forceps were allowed to remain on the renal vessels for 48 hours. This should have read *8 hours*.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.).

WEDNESDAY (28th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (29th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

FRIDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), St. Mark's (2.30 P.M.).

SATURDAY (31st).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (26th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8 P.M. Council. 8.30 P.M. Surgical Papers:—Mr. J. Hutchinson, jun.: Results of Operation for Radical Cure of Hernia.—Mr. H. S. Robinson: Angio-Sarcoma of the Breast.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (20, Hanover-square, W.).—7 P.M. Council. 8 P.M. Paper:—Mr. K. W. Goadby: The Vaccine Treatment of Pyorrhœa Alveolaris and its Sequelæ (Illustrated with lantern slides and microscopical sections).

TUESDAY (27th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Dr. A. Paine and Dr. D. J. Morgan: The Value of a Serum (Doyen) in Cases of Malignant Disease (with epidiascope demonstration).

WEDNESDAY (28th).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus, E.C.).—8.30 P.M. Pathological Evening.

THURSDAY (29th).—CHILDHOOD SOCIETY AND THE BRITISH CHILD-STUDY ASSOCIATION (Parkes Museum, Margaret-street, W.).—8 P.M. Lecture:—Mr. E. W. Wallis: Psychology of Reading. (Arranged by the Childhood Society.)

NEUROLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—8 P.M. Exhibition of Clinical Cases illustrating Various Kinds of Ocular Palsies.

FRIDAY (30th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Mr. A. Barker: Treitz's Hernia complicating Gastro-enterostomy.—Mr. P. Paton: A Case of Right Duodenal Hernia in a Child aged Three Months.—Mr. F. Eve: Enormous Cyst of the Common Bile-duct.—Mr F. C. Wallis: Three Cases of Gastro-jejunostomy.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (26th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Galloway: Clinique. (Skin.) 5.15 P.M. Lecture:—Dr. T. D. Savill: Vaso-motor Disorders and their Bearing on the Diagnosis and Treatment of Disease.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—12 noon. Dr. H. Wright: Pathological Demonstration. 2.15 P.M. Medical and Surgical Clinics. 3 P.M. Dr. Hood: Demonstration in Medical Wards. 5 P.M. Mr. Paget: Surgical Cases.

TUESDAY (27th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M. Lumleian Lecture:—Dr. D. Ferrier: On Tabes Dorsalis.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. E. Squire: Clinique. (Medical.) 5.15 P.M. Lecture:—Dr. J. Fawcett: Some Pathological Specimens with Interesting Clinical Histories.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2.15 P.M. Medical and Surgical Clinics. 5 P.M. Dr. S. Taylor: Chorea.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture-Demonstration:—Mr. A. de Prenderville: Anæsthetics.

WEDNESDAY (28th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. P. J. Freyer: Clinique. (Surgical.) 5.15 P.M. Lecture:—Mr. F. J. Stewart: Bronchocele.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.). 2.15 P.M. Medical and Surgical Clinics. 5 P.M. Dr. Beddard: Practical Medicine.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Demonstration:—Dr. W. Wingrave: Special Pathology.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Lecture:—Dr. R. A. Young: Characters and Causes of Cough in Children.

THURSDAY (29th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M. Lumleian Lecture:—Dr. D. Ferrier: On Tabes Dorsalis.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Lecture:—Dr. T. C. Shaw: The Connexion between Mind and Body.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2.15 P.M. Medical and Surgical Clinics. 4 P.M. Mr. Keetley: Demonstration in Surgical Wards. 5 P.M. Mr. Bidwell: Plaster-of-Paris Splints.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M. Dr. M. Dockrell: On the Usefulness or Otherwise of the Electrical Methods of Treatment in Skin Diseases. (Chesterfield Lecture.)

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—Dr. Still: Hydrocephalus.

FRIDAY (30th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. R. Waggett: Clinique. (Throat.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.). 2.15 P.M. Medical and Surgical Clinics. 3 P.M. Dr. S. Taylor: Demonstration in Medical Wards. 5 P.M. Mr. Dunn: Injuries to the Eye and their Treatment.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE LANCET AT THE RAILWAY BOOKSTALLS

READERS who usually obtain their copies of THE LANCET at the bookstalls on the Great Western, the London and North Western, and the minor systems in connexion with these railways, are requested to communicate with the Manager, 423, Strand, London, W.C., if they experience any difficulty in getting copies of THE LANCET at these bookstalls.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Mar. 22nd, 1906.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks
Mar. 16	29·94	S.W.	...	62	57	50	51	52	Raining
,, 17	30·07	S.W.	...	102	66	47	47	49	Fine
,, 18	29·95	W.	...	54	50	44	43	45	Overcast
,, 19	30·02	N.	0·02	86	46	38	37	40	Cloudy
,, 20	30·23	N.E.	0·06	86	46	37	37	40	Cloudy
,, 21	30·08	N.E.	0·07	72	43	37	36	39	Cloudy
,, 22	30·17	N.E.	0·03	73	40	32	32	35	Fine

During the week marked copies of the following newspapers have been received:—*Express and Echo (Devon), Army and Navy Gazette, Islington Gazette, Hampstead Express, Birmingham Weekly Post, Sun, Sheffield Telegraph, Glasgow Citizen, Globe, Belfast Whig, Newcastle Chronicle, York Herald, Notts Express, Bury Times, Middlesex County Times, Manchester Guardian, Leicester Advertiser, Portsmouth Independent, &c.*

Communications, Letters, &c., have been received from—

A.—Dr. B. Adams, Lond.; Association of Cycle Campers, Lond.; Mr. J. M. Atkinson, Chadwell Heath; Apothecaries' Hall of Ireland, Dublin, Clerk of; After-Care Association, Lond., Secretary of; Miss Adams, Lond.; Messrs. Armour and Co., Lond.

B.—Mr. F. D. Byrne, Lond.; Mr. A. W. Berkeley, Wrexham; Mr. W. G. Burcombe, Lincoln; Messrs. Branth and Co., Lond.; Bury Infirmary, Secretary of; Brin's Oxygen Co., Lond; Birkenhead Borough Hospital, Hon. Secretary of; British Electro-Therapeutic Society, Lond.; Birmingham University, Secretary of; Bridgwater Hospital, Secretary of; Dr. John Booth, Cork; Dr. F. Basenau, Amsterdam; British Balneological and Climatological Society, Lond., Hon. Secretary of; Mr. W. H. Brown, Leeds; Bristol Royal Hospital for Sick Children and Women, Secretary of; Bristol Eye Hospital, Secretary of; Mr. S. H. Benson, Lond.

C.—Dr. Arthur Court, Staveley; Calcutta, Health Officer of; Messrs. Cahlan and Co., Lond; Cornwall County Council Sanitary Committee, Chairman of; County Hospital, Bedford, Secretary of; Clayton Hospital, Wakefield, Secretary of; Mr. R. A. Caldwell, Bournemouth; Dr. Henry G. Carlisle, Heswall; Mr. F. W. Clarke, Chorlton-cum-Hardy.

D.—Dr. C. M. Dickinson, Winton; Durham County Hospital, Secretary of; Mr. John Dunlop, Lond.; Dr. G. H. S Daniell, Blandford; Mr. A. J. Davy, Lond.; Captain Campbell Dykes. Fategarh, United Provinces, India.

E.—Mr. A. E Efstratiou, Lond.

F.—Messrs. F. H. Faulding and Co., Lond.; Messrs. J. S. Fry and Sons, Bristol.

G.—Mr. F. H. Godsell, Lond.; Dr. H. J. Godwin, Winchester; Glen Distillery, Campsie Glen; Dr. A. Goodall, Farnborough Street; Dr. O. C. Gruner, Leeds; Mr. H. C. Grimwade, Bath.

H.—Mr. H. Hill, Tunbridge Wells; Mr. J. Hutchinson, jun., Lond; Dr. W. A. Hollis, Hove; Handsworth Urban District Council, Clerk to the; Hospital for Diseases of the Skin, Lond.; Humberstone Asylum, Leicester, Medical Superintendent of; Mr. E. Huxley, Lond.; H. T. S.

I.—Messrs. Ingram and Royle, Lond; I. J.

J.—Mr. Maurice Lester Johnson, Bristol; Messrs. J. F. Jones and Co., Paris; Dr. J. Arnold Jones, Lond.

K.—Dr. W. H. Kelson, Lond; Messrs. Knoll and Co., Lond.; King Edward's Hospital Fund for London, Hon. Secretaries of; Messrs. R. A. Knight and Co., Lond.

L.—Dr. Henry Love, Mitcham; Leith Hospital, Secretary of; Longstreths, Ltd., Lond.; Leeds Public Dispensary, Secretary of; Locum, Leicester.

M.—Dr. Ivy McKenzie, Dresden; Mount Vernon Hospital for Consumption and Diseases of the Chest, Lond., Secretary of; Maltine Manufacturing Co., Lond.; Mr. R. Mosse, Berlin; McDoddies, Lond.; Messrs. Oscar Moenich and Co., Lond.; Messrs. Moir, Forbes and Guy, Glasgow; M. D., Brighton; Mr C. Mansell Moullin, Lond.; Dr. Thomas J. Mays, Philadelphia; Mr. J. T. Markley, Tunbridge Wells.

N.—National Dental Hospital, Lond., Secretary of; Mr. J. C. Needes, Lond.; Mr. H. Neades, Lond.; Dr. Marcel Natier, Paris.

O.—Messrs. Oppenheimer, Son, and Co., Lond.; Messrs Orme, Evans, and Co., Wolverhampton; Mr. A. Ogilvy, Hathuwa, India; Oldham Infirmary, Secretary of; Surgeon R. S. Osborne, R.N., Lond.

P.—Mr. J. B Pike, Loughborough; Mr. Y. J. Pentland, Edinburgh; Messrs. Parke, Davis, and Co., Lond.; Dr. F. W. Pavy, Lond.; Dr. H. J. Paterson, Lond.; Dr. E. Furniss Potter, Lond.; Mr. F. Pamphilon, Gloucester; Messrs. J. Pinchen and Son, Fakenham; Dr. A. E. Permewan, Redruth; Messrs. Peacock and Hadley, Lond.

R.—Dr. B. Romeo, Rio de Janeiro; Dr. A. Richmond, Liverpool; Rebman, Ltd., Lond.; Messrs. P. M. Russell and Co., Lond.; Royal Portsmouth Hospital, Secretary of; R. F. S.; Rotherham, Medical Officer of Health of; Royal Institute of Public Health, Lond., Secretary of; Dr. Nathan Raw, Liverpool; Mr. A. J. Rodocanachi, Lond.; Messrs. H. J. Reid and Co., Lond.

S.—Mr. James Sherren, Lond.; Messrs. Roger Sadd and Stollard, Lond; Sister, Burgess Hill; Messrs. Spiers and Pond, Lond.; Dr. J. Edward Squire, Lond.; St. Mary's Hospital Medical School, Lond., Secretary of; Mr. J. C. Sale, Skegness; Mr. William Stewart, Eastbourne; Second International Congress on School Hygiene Lond., Hon. Secretaries of; Mr. J. Sandham; Spott'swoode Advertising Agency, Lond.; Mr. William Sheen, Lond.; Mr. P. M. Short, Lond.; Scholastic, Clerical, &c., Association, Lond.; Mr. W. Stuart Low, Lond.

T.—Mr. J. R. Thornton, Burgess Hill; Mr. W. Thorp, Limerick; Mr. C. J. Tansley, Leicester.

U.—University College, London, Principal of.

V.—Dr. F. Vaz, Oporto.

W.—Dr. Samuel West, Lond.; Dr. Sydney Whitaker, Liverpool; Mrs. Henrietta F. Williamson, Lond.; Dr. Wilson, Capeluio; Mrs. Wynard, Lond.; Surgeon-Colonel Francis H. Welch, Lond.; Mr. B. Woodman, Croydon; Dr. J. Darley Wynne, Clonmel; Wimbledon, Medical Officer of Health of; Westminster, Medical Officer of Health of; Dr. Andrew Wylie, Lond.; Mr. G. Wright, Lond.; Dr. R. Prosser White, Wigan; Mr. C. Wells, Leicester; Messrs. H. Wilson and Son, Lond.

Y.—Dr. B. S. Yonge, Manchester.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. R. Appleton, Beverley; Mr. E. Arnold, Lond.; A. C.; Alpha, Lond.; A. L.; A. W. D.; Ajax, Lond.; A. V. C.

B.—Dr. D. F. Browne, Castlebar; Miss Brotherton, Lond.; Messrs. Battle and Co., Neuilly-sur-Seine; Dr. J. Broadbent, Lond.; Birkenhead Children's Hospital, Secretary of; Burton-on-Trent Infirmary, Secretary of; Mr. S. Bose, Dacca; Messrs. Bates, Hendy, and Co., Reading.

C.—Mr. W. J. W. Childs, Lond.; Messrs. J. and A. Carter, Lond.; Dr. W. Craik, Goldthorpe; Mr. J. E. Chapman, North Molton; C. E. P.; C. G. S.; C. F. H. K.; Mr. J. A. Cooke, Liverpool; C. D.; Cotswold Sanatorium, Cheltenham, Secretary of; Miss M. C. Carrington, Lond.

D.—Dundee District Asylum, Steward of; D. B. T.; Mr. J. D. Davidson, Perth.

E.—Messrs. Evans, Sons, Lescher, and Webb, Liverpool; Mr. E. E. Evans, Inglewood; Mr. J. Evans, Bilston.

F.—Dr. J. H. Fraser, Bridge of Allan; F. S. B.

G.—Dr. A. S. Grünbaum, Leeds; Messrs. Garland-Smith and Co., Lond.; Messrs. Gould and Portmans, Lond.; Mr. I. Gundelfinger, Lond.

H.—Mr. E. E. Hyatt, Birkenshaw; Hulme Dispensary, Secretary of; Messrs. Hedley and Co., Lond.; Mr. P. Huckle, South Lowestoft; Messrs. John Heywood and Son, Manchester; H. J.; Mr. C. Harris, Sheffield; H. E. K.; Mr. J. Harper, Parkestone.

J.—J. N.; J. H.

K.—K. B.

L.—Dr. H. Lloyd, St. Asaph; Dr. J. Spencer Low, Lond.; Mr. H. E. Lewis, Lond.; Miss J. F. Lindsay, Lockerbie; Lancashire County Asylum, Warrington, Clerk to; Locum, Sunderland; Dr. H. E. Law, San Francisco; Mr. G. Layton, Liverpool.

M.—Dr. J. Smith Marr, Ilton; Dr. P. J. Moran, Liverpool; Messrs. Middleton and Cracknell, Lond.; Manchester Guardians, Clerk to the; M. J. M.; Messrs. Macmillan and Co., Lond.; Mr. J. S. Martin, Kidderminster; Colonel W. G. Maxwell, Nice; Dr. G. A. Mason, Lond.; Mendip Hills Sanatorium, Medical Superintendent of; Dr. J. Merson, Willerby; Messrs. W. Mate and Sons, Boscombe; M.S., M.D.; Dr. Ll. A. Morgan, Liverpool; Miss MacDarmid, Birkenhead; Dr. E. R. Maxson, Syracuse, U.S.A.

N.—Mr. F. W. North, Grantham; Mr. W. H. North, Pietermaritzburg; North Riding Infirmary, Middlesbrough, Secretary of; Northern Medical Association, Glasgow; N. C.

P.—Messrs. Preston Bros. and Co., Huddersfield.

R.—Dr. W. Robertson, Tarporley; R. A. R.; R. G. B.; R. D. S.; Dr. J. Reid, Doune; Dr. A. Richardson, Bristol; Miss R.

S.—Mr. H. W. Scriven, Lond.; Standard Tablet Co., Hove; Messrs. Squire and Sons, Lond.; St. John Ambulance Association, Lond., Secretary of; Messrs. T. G. Scott and Son, Lond.

T.—Dr. D. Townsend, Brookline; Mr. H. M. Thomas, Lond.; Miss Tyler, Lond.; Toronto General Hospital, Canada, Superintendent of; T. B. G.; Mr. A. W. Tribe, Lond; Mr. J. Thin, Edinburgh.

U.—U. S.

W.—Mrs. A. Watson, Weybridge; Mr. W. Wilkinson, Bishop Auckland; Miss Whitmore Bromley; Mr. W. F. Walker, Dinas Mawdwy.

Y.—York Medical Society, Secretary of.

EVERY FRIDAY.

THE LANCET.

PRICE SEVENPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications	Seven Lines and under	£0 5 0
Official and General Announcements	Ditto	0 5 0
Trade and Miscellaneous Advertisements and Situations Vacant	Ditto	0 4 6
	Every additional Line	0 0 6

Situations wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d. Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 31, Rue Bapte, Asnières, Paris.